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THE LEGACY OF GREEK ART TO THE MODERN WORLD.

THE misfortune of the Renaissance, as of the early writers on Greek art, such as Winckelmann and Lessing, was this—that the principles formulated by them were, as a rule, based not on Greek art in the true sense, but on late and exaggerated works, such as the Laocoon, or on copies of Greek statues made for the Roman market, such as fill the older galleries of Europe. If we no longer regard the Farnese Hercules as the type of strength, if we no longer see in the absence of muscles in the Apollo Belvidere proof of the Greek love of the ideal, it is because recent discoveries have shown that Greek work of the best period does not exaggerate or grimace, but represents the human form at its best without the display of scientific knowledge, which makes certain late athlete statues look like anatomical studies, or the smoothing away of bodily structure, to which is due much of the frigidity of "classical" art. The hulking brutalities of Baccio Bandinelli and the smooth ineptitudes of the school of Canova are alike due to this false interpretation of Greek art, and few outside the band of archæologists of all nations whose task it is to set forth a truer view realise how profoundly recent discoveries have changed the face of things. The student knows that the lesson of Greek is the use of a material to express artistic truth, and that artistic truth is not, and never can be, Art for Art's sake. The aim of sculpture, as Pliny says of the work of Lysippus, is "the representation of men as they are," of religious sculpture, "the perfect expression of the divine majesty." Man as he is, God as the embodiment of man in his grandest, noblest form—these were the aims of Greek artists. To represent Zeus, as another ancient critic says, "so that none that looked on the work could well conceive the God in another shape," to represent the wounded Philoctetes, "so that the spectator seems to feel his pain," "to catch the souls of men and beasts and enchain them in bronze"—these are a few of the sayings of Greek and Roman critics which may help us to understand something of the spirit in which Greek sculptors worked.

The study of Greek architecture, in which we must include the study of architectural sculpture, has had the great advantage of starting without the handicap of a false traditional interpretation. Greek temples have always been known in the original, not in copies, except in so far as Roman buildings had confused the true tradition, as in placing a complete entablature above the column and letting the vault spring from that. Architectural sculpture, it is true, was not thought worthy of serious study until the Elgin marbles were brought to England and received the doubtful advertisement of Byron's hostility and a Parliamentary inquiry, and the unhesitating and enthusiastic welcome of every competent art critic in Europe, from Canova to Haydon. James Barry, indeed, had some years earlier secured reproductions of Carrey's drawings of the pediments of the Parthenon, which were published in his collected works soon after his death; but Barry's was a voice crying in the wilderness, and that love for the Antique which led him, with sixteen shillings in his pocket, to offer to paint free of all cost the great room of the Society of Arts in the Adelphi was unrewarded in his life and forgotten after his death.

But it is not only to the Elgin marbles that we now turn for illustrations of the true architectural use of sculpture. Olympia, Delphi, Aegina, and Phigaleia—the latter once used by the Whig party as political capital, the Prince Regent's marbles as against Lord Elgin's—all contribute to our knowledge, and the two first at least, like the Parthenon itself, owe their rise to that impulse of triumphant patriotism which ran through Greece after the defeat of Persia. Thank-offerings to the gods rose on every side, and the great Hellenic sanctuaries of Delphi and Olympia were the first to feel the consequence. The Treasuries of the Siphnians, the Athenians, and the Megarians, with their exquisite detail and delicate archaic friezes, are among the treasures of Ionian art; the pediments of Olympia, perhaps the noblest existing example of the perfect adaptation of architectural sculpture to its place and field, are somewhat later, and mark the beginning of that virile Dorian influence which was to have so great an effect upon Greek art. As to the Parthenon and its fellow buildings, which are nearly twenty years later again, the builders of Periclean Athens had an opportunity which can only be compared with that of Wren after the Fire of London. Athens was sacked by Xerxes in 480 B.C., her walls levelled to the ground, her glories destroyed; the Athenians returned to their ruined city, yet their thank-offerings at Delphi and Olympia were set up before they turned to the rebuilding of their own shrines and temples. More fortunate than Wren, Pheidias and Ictinus had not to contend with the parcimony of authorities bent on saving money at all costs; the policy of Pericles, the opportunity of Athens coincided; the Confederacy of Delos supplied the funds, and the genius of great artists gave such expression to the ideals of a people that the ruins of Periclean Athens remain the inspiration of the world.

One other piece of good fortune befel the Athenians, the discovery of marble on Mount Pentelicus. Before the Persian invasion island marble from the quarries of Naxos, Delos, and Paros had been imported for the finer sort of sculpture, while for architectural purposes the coarse local limestone was generally employed. The use of the local material is indeed typical of Greek architecture at every period, though at Athens and elsewhere island marbles were often used for special purposes when the local stone was coarse; limestone is used in sixth-century Athens and in the sixth-century Treasury of the Sicyonians at Delphi; the grey stone columns of Olympia, the dull Peloponnesian marble of the Phigaleian frieze are other examples of this rule. The happy discovery of Pentelic marble put a stop once for all to the rival practices of importing fine marbles except in the case of small single works) and of using the local limestone by supplying a material the most exquisite that can be imagined, to the use of which the Acropolis owes much of its unique and magical charm. To a Greek architect it would have been intolerable to build in brick or rough-cast in the grey stone country of our Western midlands; he would have held with Pope, in act if not in word,

> Consult the genius of the place in all,

and only the revival of this Greek sense of fitness can save some of the most typical of English scenes from a more than Persian desecration.

Northern architecture can never attain that supremacy of public buildings which meets us on the Acropolis, because northern conditions demand that buildings for private use should be far larger

in proportion than those of Greece. The Greek house was small and insignificant; the men at least lived out of doors and in public places, and it is to public places that we must look for the illustration of Greek art. Religion demanded a dignified approach to the temple and room within for procession and sacrifice, though the mere shrine might be small enough; the theatre had a half-religious character, and on it depended much of the higher pleasures of the people; baths and porticoes took the place of clubs. In each and all of these the need of art, sculpture, painting, and architecture was apparent. But Art for Art's sake was not the motto of the Greeks. Whatever the structure might be, use was the first consideration. The object of a theatre was to enable as many as possible to see and hear, and the result, as all who have been in a great Greek theatre know, was a system of acoustics so perfect that its secret has never been discovered, and an arrangement of seats so convenient that, though some seats are better than others, it is impossible not to see, and to see well. The object of a portico was to give protection from sun and rain, and a convenient meeting-place for the citizens; here, obviously, was the place for convenient seats and well-chosen works of art; and frescoes and statues tending, as a rule, to glorify the city and her gods were accordingly placed where most people could most conveniently see them. The Propylæa, the great entrance to the Acropolis, was the main approach to the sacred places of the city; its design, therefore, demanded the qualities of space and dignity, and the architect Mnesicles so fulfilled his task that the Parthenon itself is scarcely more impressive. To the architectural side of the Parthenon belong the qualities of finish, of mathematical accuracy in the fitting of stone to stone, of subtlety by which the sagging of a straight line seen from the corner is corrected by minute curves so that the line shall appear straight to the eye; and they find their only parallel in that correction of the perspective to suit its position on the building which makes the frieze and pediments the marvels of sculpture that they are. All alike express that most typically Greek feeling for the adaptation of means to ends which modern imitations have so lamentably lost. It is useless to take over the forms of ancient architecture without the spirit, to build a museum on the lines of a Greek temple at the cost of light and air, or to apply the portico of another temple, with its Greek worshippers in their festal dress, to the side of an English church; this is to violate the very spirit we would copy, and vulgarise the name of Greece.

The Greek feeling for ornament was always exquisite; it feared neither blank spaces nor appropriate ornament. A Greek vase of a good period differs by a whole heaven from the degenerate Mycenæan or orientalising art which precedes it, in which every corner is filled with meaningless ornament, animate or inanimate, and rosettes will appear between the legs of horses or on the flank of a lioness, for fear the truth of empty spaces should seem dull. There is no more deadly sign in art than this *horror vacui*, which means that the artist cannot trust his own design, does not believe in the value of the forms he is himself creating. This it is which drives the jerry-builder to ornament his house with scrolls and fretted roof tiles, which leads the architect to fill the spaces over doors or windows with machine-made mouldings, swags of fruit and flowers which touch nothing that they do not disfigure, or gigantic masks of men and women which express no belief on the part of their maker and produce no effect on the mind of the spectator. Scarcely less grave a symptom, on the other hand, and scarcely more un-Greek, is the fear of ornament in its proper place. We have been so overwhelmed with bad decoration that we prefer none, feeling safer with plain carpets, or hangings, or pottery than with any form of ornament; the happy exception to this rule, Oriental carpets and printed stuffs, and the expensive modern hand-printed fabrics, only prove the bankruptcy of machine-made art, and it is curious and significant that absence of decoration is usually more expensive than elaborate ornament of the manufactured type. And this fear of ornament is now the more serious danger of the two; for it is the fashion among many of those whose judgment in these matters is most respected. May not the uncultured be excused for saying, as they begin to, "If these people, with their knowledge of art, like everything about them plain, must they not be right?" Yet it is no more than a reaction, a cowardice.

If English art and architecture are to recover from the effects of these opposite but connected dangers, the fear of empty spaces and the distrust of decoration, it will be by cultivating that Greek feeling for design which knew when it wanted ornament and when blank spaces, and did not fear to use either. The only way by which this can be done is to educate public opinion. Those whose eye is trained to better things are apt to shrug their shoulders in despair over the latest block of shops whose massive pillared superstructure appears to rest on a foundation of plate glass, or the newest Government office adorned with wreaths of bulbous fruits and unmeaning scrolls; it is for them to realise that only by their public protest can the public at large be brought to see that anything is wrong, and that only by seeing that something is wrong can the feeling for what is right be slowly developed.

But to see what is wrong is not enough; we must also recognise what is right. It is a commonplace that the more we know of any subject the more we appreciate any new light, and, though all cannot be specialists, all possessing even a limited acquaintance with good original work in any branch of art, whether that acquaintance is based on photographs and casts or on the study of the monuments themselves, can know enough to reject what is bad; and the rejection of the bad is halfway to the appreciation of the good.

The legacy of fitness, which is artistic truth, is the great legacy of Greece; it is for us to see that the lesson which our fathers learned as in a glass darkly, in its pale reflection and tradition is not lost on ourselves and our descendants, now that the spirit of Greece has been revealed.

A BATTLE OF THE STYLES.

A SOUND—as of battles long ago—is in the air. From the skirmish on the Guildhall Yard to the far more fateful general action, whose thunders resounded along the serried files and columns of the *Times*, the embattled styles, once more arrayed against each other, wage their perennial war. We have already expressed a view upon this most recent engagement which here we neither alter nor add to save by a reflection or two growing out of our comparison of style to language.

The general idea of the several protagonists seems to be that of certain existing styles, mostly inadmissible, we can select one, of which, as a kind of rule or pattern, we may build our city consistently from start to finish. It might be just possible; possible also that we might even find the result very good; though we could hardly arrange that others and those who come after should think so too. We remember that early folk in the ancient East, while as yet "all were of one language and one speech," who said, "Go to, let us build us a city and a tower . . . let us make us a name!" and we remember the confusion that overtook them in their pride.

Language ever grew by long process, spontaneously and irregularly, so that all, not only a cultured few, could both express themselves therein and understand: an instrument first of all for telling the truth, though afterwards perchance—when man began to seek out many inventions—for concealing thought. No tyrant ever yet has succeeded in making and imposing a language by rule or in destroying a mother tongue—save perchance by cutting it out.

All of which, since language is akin to style, has its suggestiveness in the unique problem awaiting our solution in the great Eastern dominion of many peoples. We can give them a great and certain boon in all that Western science has evolved in the way of efficient constructive systems and methods. In this alone we give them a fundamental basis of modern style. And since, in starting to build our city, we cannot well escape some expression of the common heritage in universal architecture, even some specific style, let our choice of historic forms be guided by considerations, not of our own dignity and dominance, but of freedom for the adaptation and development of our efficient constructional expedients to the peculiar local requirements and conditions—climatic, racial, traditional, and the rest—that prevail there.

The more we consider the architecture of the past the more we come to the conclusion that it has always in great ages been the product of minds impressed with a sense of beauty, never regardless of practical wants and considerations.

So much we may well do in the inception and guidance of fitting style. The rest, its more subtle expression of meanings, of tradition and of aspiration, we can only leave to time and local influences, and to the working of that which we cannot control and can but imperfectly apprehend—the genius of the East.

NOTES.

A Suggested Completion of the Mall.

An interesting suggestion put forward in the *Times* by Sir Richard Paget that the entrance from Trafalgar-square to the Mall might be closed by an immense arch containing office accommodation, bringing in a good revenue, has prompted Professor Adshead to contribute a sketch showing the effect of such a treatment as seen from the square. There is a good deal to be said for Professor Adshead's contention that the present Admiralty Arch is too far hidden away, and not sufficiently pronounced to provide that commanding feature which is so necessary here in order adequately to sustain the balance of the whole Trafalgar-square enclosure, to counterbalance the lofty buildings opposite (at the entrance to Northumberland-avenue), and, above all, to emphasise the entrance to the Mall. Although monumental art at 5 per cent. is no doubt quite in conformity with the spirit of the age, the purist in art may not be quite satisfied; while there may be those who will think that Professor Adshead has rather overdone the size of his building. Professor Pite also, if we remember rightly, has suggested a somewhat similar idea, but without the revenue-producing element. Considering the difficulty of bringing the sweep of the present Admiralty Arch into the general shape of Trafalgar-square, there is no doubt that the general idea of this suggestion deserves careful consideration.

Bath and the Radium Syndicate.

We have received a letter from the Radium Syndicate, whose architects are preparing plans for the building alluded to in our article on "Bath and Vandalism" in last week's issue. Attention is called to the incorrectness of the plan published, but we are not informed as to the details in which the plan is incorrect. It is stated that the site of the new buildings is covered by "a medley of small and comparatively uninteresting structures which materially detract from the dignity of the important buildings, both old and new, in the immediate vicinity." Also that "the new buildings are designed to harmonise with the Classic architecture for which the city is famous, and the open spaces are materially increased." We are also told that the extension of the bathing establishment is necessary. All these facts may be as stated, and there is nothing in our article which in the least conflicts with them, but our point, which was clearly put, is not even alluded to. Our argument is this, that an eight-story building in such a position, however well designed and carried out, would be out of scale with the Abbey and with the Roman Bath and Pump Room in their immediate vicinity. It is a question of scale and not of design, which does not affect the relevance of our argument. Had the proposal been one to build on the site an extension of the Baths of a height and design in harmony with the existing buildings we should have considered the proposal an admirable one, but a combined baths extension and hotel of the dimensions suggested is quite another matter. If the Radium Syndicate will supply us with scale drawings of the new buildings and their immediate architectural neighbours we believe facts will speak for themselves.

The Amateur Opinion of Architects.

As a great Scotsman has put it, we should learn to see ourselves as others see us, and to no body of men is such a point of view more valuable than to the average architect. We hope in our columns next week to give the candid opinions of one who sees us from outside, and if there are more who will hold up the mirror of truth before us they will at once afford us entertainment and instruction. We imagine the popular feeling may be expressed somewhat in this way—that an architect usually wishes to carry out his own ideas at someone else's expense. There is, we fear, in many cases a grave doubt as to his altruism, and we have even heard an unkind critic remark that an architect is not a harmless crank, but a dangerous one! These crude views are, of course, based on ignorance, and most of us know a select circle among whom their profession is accorded more sympathetic treatment; but even in the sheltered quarters we sometimes have the great shock of finding that we are not considered quite on the footing of other men. For all which reasons we should welcome the candid criticism of the unintelligent Philistine that the millennium can be brought nearer and the architect stripped of the popular wolf's hide with which legends would adorn him. Such hopes may prove illusions, but they are precious to us.

The Study of Architecture.

Sir Ernest George has just delivered an interesting and instructive lecture at the Royal Academy, which we hope to publish in our columns next week. Few architects can point to such a record of work in almost every branch of architecture as that of Sir Ernest George, and his knowledge of architectural drawing and water-colour work and etching give his advice to students exceptional value. He has, moreover, the rare gift of conveying the enthusiasm for architecture which has always distinguished him to those with whom he is brought in contact.

The New Delhi.

We learn that the site of the new City has been settled after long discussion. Sir Bradford Leslie's scheme was thoroughly considered, but rejected owing to the expense it would have entailed, its unhealthy position, and insufficient area. The southern site has finally been selected, the Army Committee having stated that the northern site had no cantonment area. It is considered that the choice of Captain Swinton, Mr. Brodie, and Mr. Lutyens as advisers has been fully justified. From the foregoing it appears we have every reason for hoping that a satisfactory solution has been arrived at.

Memorial to Norman Shaw.

We are glad to be able to report that an influential movement is on foot to provide a fitting memorial to Norman Shaw. A letter to the *Times* of Thursday, signed by the Executive Committee which has been formed, is signed by the Earl of Plymouth, Edward J. Poynter, Thos. G. Jackson, Aston Webb, Reginald Blomfield, and Fred. A. White, and a strong General Committee has been formed. It is hoped by the writers that the memorial will take the form of a portrait bust with a suitable description to be placed in front of Scotland-yard, facing the Embankment, and that it will be designed by Professor Lethaby, with sculpture executed by Mr. Hamo Thorneycroft, R.A. The greatest memorial to Mr. Shaw must always be the work with which he has enriched English architecture, but it is appropriate that we should also show our reverence for a great Englishman and artist by a tribute of a personal nature.

The New Regent-street.

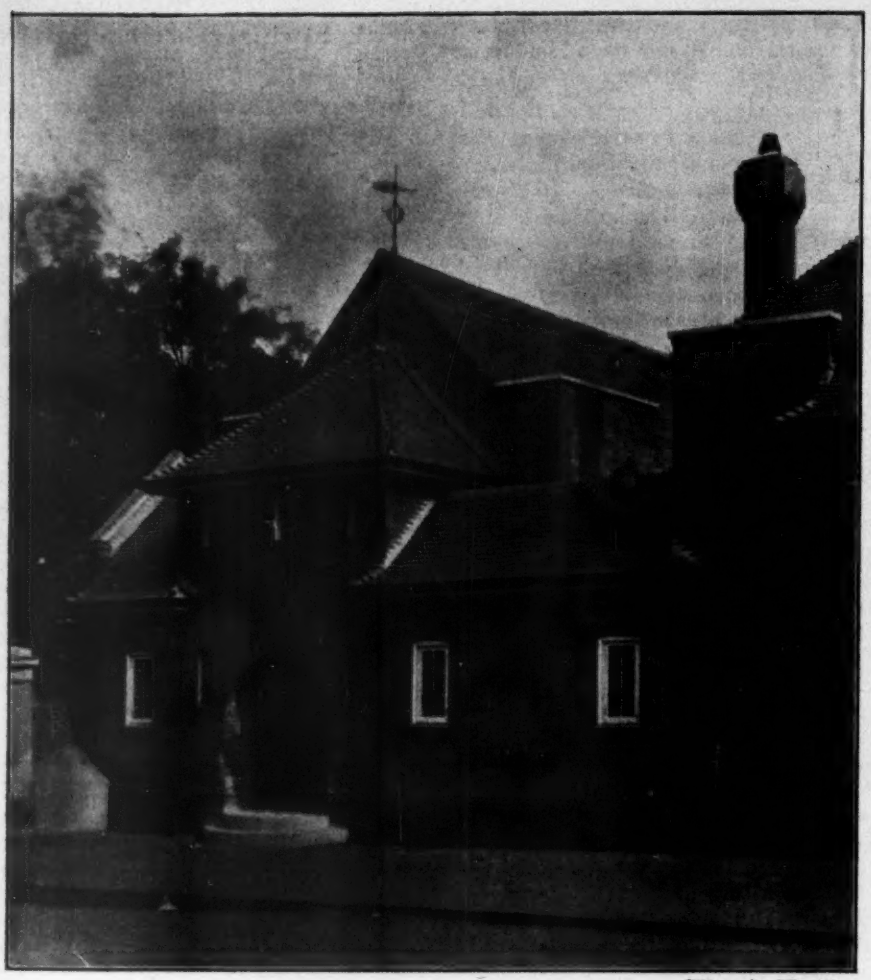
The report of the Committee appointed to consider the question of a suitable design to be adopted for completing the rebuilding of the Quadrant have now issued their report after hearing evidence from a number of traders and architects. The recommendations, which we shall further comment on in our next issue, are briefly as follows:—All the traders represented, with the exception of Messrs. Swan & Edgar, desire a building of less height than the Piccadilly Hotel, and all are unanimous in desiring the omission of the columnar treatment above the mezzanine, the alteration of the arcaded treatment of the ground floor and mezzanine of the hotel design, and a simpler and less expensive treatment than that of Mr. Shaw. We shall deal with the Committee's recommendations at length in our next issue.

MODERN STREET ARCHITECTURE.

In a second article in the *Morning Post* on December 26 last Mr. March Phillipps deals with Kingsway, which we should be almost inclined to call the most disappointing of the new streets of London. Considering that in it we have buildings designed by Mr. Lutyens, Mr. Belcher, Dr. Burnet, and other well-known architects, we should expect to feel a satisfaction which is absent. Mr. March Phillipps says that all fine architecture is of two kinds, the first of which is a spontaneous expression of life, the second the calculated and critical result of examination and analysis—that for the first favourable conditions of soil are essential, while for the architecture that is taught the intellectual capacity to choose between right and wrong is essential. The one Mr. Phillipps considers as appertaining to the country, the other to towns.

In the article the writer emphasises his contention that the Greek and Roman influences are in conflict in what we term the Renaissance, the one influence seeming to him all that is good, the other totally evil. Dr. Burnet's Kodak building is instanced as an example of the Greek spirit and as showing the greatest delicacy and refinement.

We feel that such criticism is too abstract and, with all due respect for the writer's ability, discloses a want of just balance. The Roman contribution to architecture was a great one, and consisted largely in the power of devising and grouping buildings together, the power to think out problems in a big way; in a word, what is wanted to-day in the development of our cities. Refinement of detail is good in itself, perfection of outline most desirable, but even these applied to every building in a thoroughfare will not give us a fine street. Each individual building in a street may be an example of good design, yet the whole effect



[*Photo. by Minnitt.*

Boys' Home, Rectory-grove, Clapham.
Mr. Lionel U. Grace, F.R.I.B.A., Architect.

of the street, which, after all, is the most important consideration, may be utterly disappointing. It is in this respect that we feel disposed to consider Kingsway one of the least satisfactory of our new streets. The absence of any attempt to consider the effect of the buildings abutting upon it as a whole is its great fault. The position of towers, gables, and features has not been considered by any designer in their relation to the whole street, but simply in their relation to the narrow section which constitutes a single building.

When we think of Nash's Regent-street, carried out, as it was, in plaster, and compare it with Kingsway, in which Portland stone is used almost throughout, we must admit that dignity of design cannot be obtained without unity of conception, and we must hope for the future that authorities who have, as in this case, the power of control will exercise it in the public interest.

We feel that, in his endeavour to point out the Greek feeling in our Georgian work, Mr. March Phillipps goes to extremes. The work of the Georgian epoch, whether excellent or the reverse, shows little or none of the spirit of Greek detail. Excellent as is much of the work of the period, we should hardly characterise it as being marked by the placing of "very delicate enrichment just where it is wanted." We should, on the contrary, have described it as a style characterised by vigour and, above all, by common sense, and as being sound, practical, and showing first and foremost a recognition of the wants of a somewhat unimaginative age. In conclusion, we feel that Mr. Phillipps' main contention needs other illustrations than those quoted by him in its support.

THE NEW DELHI.

At a meeting of the Delhi Executive Council the Government, after considering the reports of the town-planning experts and the military and medical Committees appointed to examine the question, finally resolved to adhere to the decision in favour of the southern site as the seat of the new capital.—*The Times.*

ANGLO-SAXON ARCHITECTURE.

SECOND LECTURE.

On February 24 Professor Baldwin Brown delivered the second of his course of four lectures at King's College on Anglo-Saxon Architecture. He said there were about 200 churches in the country which had distinct traces of Anglo-Saxon work upon them, and doubtless there were a good many more than they had any idea of, because it happened now and again that the stripping of the plaster from a wall showed that the wall, which had perhaps been classed as of the XIIth century, was really one built before the Norman Conquest. There were several general characteristics consistent throughout the Anglo-Saxon style by which they could tell an Anglo-Saxon church. In proportions of planning and of elevation the tendency of Anglo-Saxon buildings was narrowness and height. A church which was very long in proportion to its width was more likely to be Anglo-Saxon than Norman, and if the height of the walls was remarkable in comparison with the width of the church that again was a very distinct Anglo-Saxon symptom, although they must always remember that there were low and wide Anglo-Saxon churches as well as long and high ones. Another criterion was the thinness of the walls. The Saxon wall was nearly always thinner than the Norman wall. Thirdly, the Anglo-Saxon was homogeneous in its structure, and was not like the Norman walls, with two faces and the rest filled up with rubble. It followed as a kind of corollary that there was nothing like the decorative treatment of the wall surfaces by a sort of mosaic or herring-bone work, common in some styles on the Continent, and used occasionally in Norman work. The characteristic herring-bone masonry, although it did occur in Saxon work, was rare. Then in Saxon arches the voussoir stones went right through the whole thickness of the wall. Another characteristic of Saxon work, which illustrated the ungrammatical character one found so constantly, was that the voussoirs were not properly cut. They never seemed to have hit upon a way of doing it. Then there was an absence of buttresses generally, although they were occasionally found in Anglo-Saxon work. Window openings varied in different periods of the Anglo-Saxon style. The early windows were narrow in their opening, but they were widely splayed internally. At a later period they were double splayed, but still later on they were much like Norman windows. Saxon doorways were more consistent than the windows throughout the style. They were mostly high and narrow, and often had sloping jambs. The jambs came a little nearer above than below, which was characteristic of stone doorways in Ireland, and certainly the Celtic influence showed itself in Anglo-Saxon work. Another fact was that there was seldom a rebate for the door, and, generally speaking, the door must have shut straight against the internal face of the opening. Then the lintel of the doorway was often flat, and mouldings, and so on, were plain and rude. They might divide these Anglo-Saxon churches, which covered a period of about four and a half centuries, into two general groups. The early group would cover the VIIth and the first half of the VIIIth centuries, and the last group from about the middle of the Xth century to the Norman Conquest. There was left then the intervening period with part of the VIIIth, the IXth, and part of the Xth centuries, which was the period of the Viking inroads, and there were no churches which they could absolutely date to that period. It was, however, an important architectural period, because certain forms were being evolved that found their expression later on. Both the early and the late periods were well represented by monuments, and these had distinct characteristics, differing in the two periods, whilst each period offered interesting points of comparison with contemporary work on the Continent. They might say there were four possible influences which went to form the early Anglo-Saxon style :—(1) The old Teutonic building tradition, (2) the Roman, (3) the Celtic, and (4) the Gallic, or the influence of contemporary buildings in Gaul. Dealing with the first consideration, Professor Baldwin Brown said the Teutonic conquerers came from the North, and the building tradition of North Germany and of Scandinavia was a wood tradition. Timber was the commonest material in Anglo-Saxon building, and probably as many churches were of wood as of stone or brick. One Anglo-Saxon wood church at Greenstead, near Ongar, Essex, still remained. The influence of wood technique had been seen in the narrow strips of stonework projecting from the wall faces of many Anglo-Saxon churches, and especially was it illustrated in the tower of Earls Barton. But there were objections to their accepting the view that these stone strips originated in woodwork, one being that they could find another origin which was more probable, and the second being that such influence would have led to the buildings being block buildings. Therefore they might, he thought, eliminate the old Teutonic tradition of timber building as a possible influence upon the stone structures of the Saxon period. The Anglo-Saxon invaders settled in a land which in parts was thoroughly Romanised, and when they began to build in stone and brick they necessarily used Roman materials and methods, but they applied these materials for ecclesiastical purposes, and the Christianity they expressed in their buildings was Celtic Christianity. Thus the early Anglo-Saxon churches showed signs of Celtic forms of church building, just as they also showed signs of Roman forms. The chief difference was seen in the treatment of the altar end. The churches of Roman tradition were apsidal, and those of Celtic tradition had the square ends which always occurred in early Irish churches, and which had remained characteristic of English ecclesiastical buildings all through their history. As to the Gallic influence, their earliest churches showed from the first certain features which were not normal in the familiar basilican churches, found, for instance, in Ravenna. They found two innovations, as it were, in the earliest Saxon churches, viz., the habit of marking off a space before the actual apse or the square chancel, which was really the altar house; and, secondly, the addition of porches of entrance or side chapels. Where this came from it was not easy to say, and possibly Gaul did influence these innovations, because, to judge from the literary accounts they had of important churches built in Gaul in the Vth and VIth centuries they showed architectural advances in the direction of later Romanesque forms over and above what was being done in Italy. The fact was that Gaul and Britain

were moving forward in architecture, and Italy remained constant to the old early Christian traditions. In the later period a new, unmistakable influence showed itself from the Carolingian Empire in Germany. There was a close political connexion between England and the Carolingian Empire, and it came out in architecture, and was much closer with the Eastern district of that empire than it was with the Western district; that was to say, the later Anglo-Saxon architecture showed very strongly the influence of Saxony and Westphalia. Proceeding to deal in detail with some of the churches of the first period of Anglo-Saxon architecture, the lecturer described the abbey church of the famous Wilfrid, at Hexham, dated 675, which was minutely chronicled by Wilfrid's companion and biographer. Wilfrid built two churches at Hexham, one a regular abbey church, on the basilican plan, which was destroyed by the Scots, and not rebuilt until our own day. The crypt of that church still remained. The other was a church on the Greek cross plan. What was most interesting about Wilfrid's building at Hexham was that he seemed to have combined some of the features of the central, or domed, church with those of the basilica, and in this way anticipated in some degree the later development of architecture in the early Romanesque period. Lately the ground once covered by Wilfrid's abbey church had been excavated for the rebuilding of the nave, but they had not found the whole plan of the church, as expected, although fragments had been found here and there. Unfortunately, the plans and levels found had not been properly published. It was the multiplication of altars which was really a determining factor in the movement which led to the architectural development of the mediæval church, and they were told that both at Hexham and York these altars were placed in architectural structures intended for them, which was a great advance on the original plan of merely placing them in the aisles. The church at Brixworth, which still existed, supported the view that big things in architecture were planned and carried out in the VIIth century in this country. Underneath the present cathedral at Ripon there existed a crypt almost exactly like that at Hexham, and they were told that Wilfrid also constructed this crypt. Professor Baldwin Brown exhibited photographs and sketches of the plans and buildings of Brixworth Church, which was a basilican church, and of the church at Reculver, Kent. The photographs showed the same idea of screening off a space before the altar, which was also found in some of the Italian churches and in the ruined German church at Michelstadt, but more strikingly still in some early churches in Spain, which some good authorities pronounced Visigothic. The same feature was to be found in the Church of St. Pancras, Canterbury, which had also a western porch like that at Brixworth.

THE BOYS' HOME, RECTORY-GROVE, CLAPHAM, S.W.

THIS work was executed for the Honorary Director, Mr. A. Russell Baker, with moneys received from a legacy bequeathed to the Home for the purposes of enlargement.

The large dining-hall, which is used as a gymnasium, is panelled in oak, ample exits having been provided, enabling the room to be used for entertainments. The oak carving was carried out by Mr. A. Roselieb. The chapel, which is also panelled in oak, provides seating accommodation for about 100 boys, having been erected in memory of John Russell Baker, Maria, his wife, and the Rev. Arthur Russell Baker. The plaster corbels therein were modelled by Messrs. G. & A. Brown, of Hammersmith, and the hot water heating arrangements throughout were installed by Messrs. George Wright, Ltd.

The general contractors were Messrs. Garrett & Sons, of Balham-hill, S.W., and the whole of the work was carried out from the designs and under the supervision of Mr. Lionel U. Grace, F.R.I.B.A., of Queen Victoria-street, London, E.C.

GEFFREY'S ALMSHOUSES, KINGSLAND-ROAD.

These buildings, recently acquired by the London County Council, will be utilised as a museum and library of furniture and cabinet making, an industry that is largely carried on in Shoreditch and the vicinity. In making their recommendation the Local Government Committee advocated the principle of providing special industrial museums in suitable centres of trade rather than the establishment of one large museum of all the artistic crafts.

SOME SUGGESTIONS FOR INCREASING THE USEFULNESS OF AN ARCHITECTURAL ASSOCIATION.*

As Editor of the Architectural Association *Journal* there has been given to me the opportunity of hearing many different views on various subjects connected with our London Architectural Association, which fact is my only justification for the suggestions—good, bad, or indifferent; practical, essential, and purely ideal—which I shall try to put before you in the course of this evening. . . .

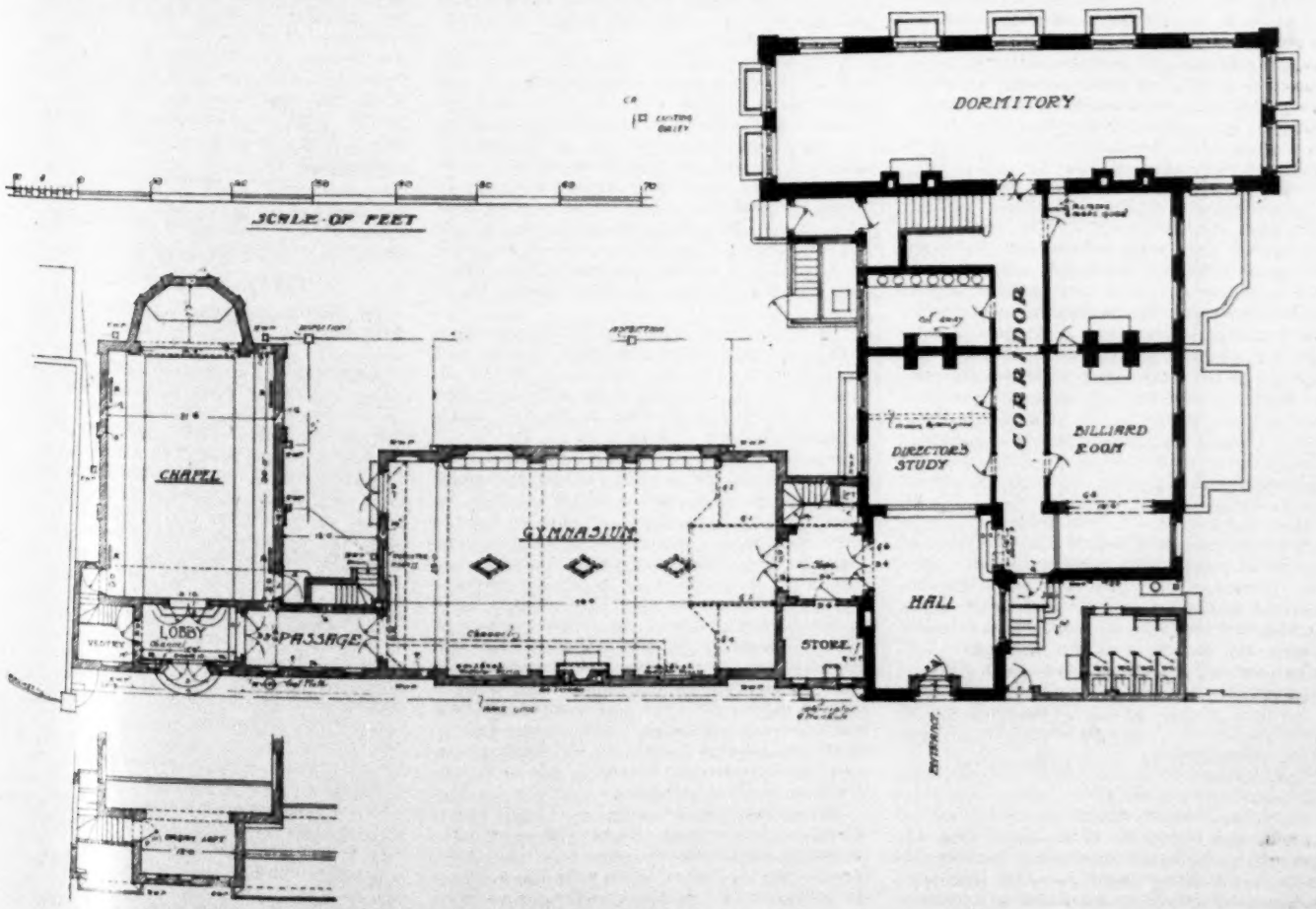
If I can stir you (and some of our own people, too) from this comfortable and easy-going apathy my reward will be no doubt all the kicks and other demonstrations of affectionate regard usually bestowed on an unwelcome intruder on sweet repose.

Look, for instance, at the present Government. The chiefest of their sins—although possibly it has not occurred to you—is that they have thoroughly shaken us in all our comfortable, insular, conservative habits; we have been forced to awake from our drowsy routine to see how the various unpleasant things which have been thrust upon us would affect our own particular trade or profession. In the process we noticed defects, flaws, bad organisation, and wasted energy. We have naturally put these things right. And now we read of a record trade boom. Is it not possible that there is some connection between these two facts? I am neither a Radical nor a Socialist, and I did not come here to talk politics, but I ask you whether there is not a lesson in this which we should take to ourselves. Is there a waste of energy or lack of organisation in our associations? And if this be so, how can we best repair these defects?

The London Architectural Association, like your own, grew from quite small beginnings, but there is one thing I ask you to remember, and that is—all its early members were enthusiasts.

You must be an enthusiast to start a movement. These men had difficulties to overcome, but they faced them with determination, and won success. . . .

*From a paper by Mr. Cart de Lafontaine read before the Birmingham Architectural Association on Friday, February 21.



The Society of the Good Shepherd, Rectory-grove, Clapham: Ground Floor.

Mr. Lionel U. Grace, F.R.I.B.A., Architect.

As the first President of our Society, the late Professor Robert Kerr said a few years ago, when speaking of its origin and the conditions of architectural training at the time: 'The time had come for a stirring of dry bones. It was not the seniors, but the juniors themselves who made the demand that there should be supplied to the inquisitiveness of youth "something more up to date than all this." "Why not take the matter in hand themselves?" said young Charles Gray? "Why not, indeed, indeed," said Donaldson and Godwin. So they did it; and the upshot of it has been that, not in London alone, but in other centres of English energy, it has become a first principle in our professional training that the young men shall put their own shoulders to the wheel as an organised body. And well, thoroughly well, has it answered.'

So will it ever be—enthusiasm is with the young.

Now, our 'Brown Book' states the objects of the Association to be as follows:—'To promote and afford facilities for the study of architecture, and to serve as a medium of friendly communication between the members and others interested in the progress of architecture.' It goes on to say that these objects shall, so far as practicable, be carried out by means of papers and discussions, a library, lectures and classes, a school of architecture, prizes and scholarships, visits to works and buildings, periodical publications, and by such other means as the Council may determine from time to time. A goodly list. The communication between members fostered by these means has led to the formation of many valuable friendships, and will lead to the formation of a good many more, for the different societies within the Association which encourage informal but useful meetings among our members are all doing as well as we could wish."

These societies within a society to which our President refers are certainly one of the most successful means of bringing about the friendly communication between members which is the reason for our existence as a corporate body, and about which I shall have something more to say later on. Therefore I will tell you something about them

The largest of these societies is the Camera, Sketch, and Debate Club, which (as its rather cumbrous title suggests) is the outcome of an amalgamation of the Camera and Sketching Club with the Debating Society. This fusion took place in 1910. The aims of the club are the study of architecture by means of photography, sketching, and debate, and, incidentally, to promote greater sociability among members. These aims have certainly been achieved, and consequently members of the Camera, Sketch, and Debate Club are really keen members of the Architectural Association.

So it will be well if we note that this result is achieved by the following means (again I quote from our "Brown Book"):—

"During the summer months Saturday afternoon visits and week-end excursions are made to places of architectural interest, special programmes being arranged for the Easter, Whitsun, and August Bank Holidays.

It is the aim of the Committee to keep the expenses on these excursions as low as possible, and the extensive use of the cycle has been found a ready means to this end.

The winter programme consists of meetings at which papers are read and debates held, an exhibition of photographs and sketches, and an annual dinner."

The experiment of combining with the Camera, Sketch, and Debate Club for some of our ordinary general meetings, which was made some time ago, has proved a great success, resulting in a much better attendance and a marked improvement in the discussion which follows the paper on these evenings. Two papers dealing with a question from different standpoints are often read, and this brings out a number of interesting views and special points of interest which could not be obtained in any other way.

The further experiment of reducing the number of the general and combined meetings from twelve to eight, which I suggested to our Council, and which has been tried during the past session, has had two excellent results:—(1) There has been a better selection of papers read, and (2) the *Journal* has not been quite so overloaded with matter, which, quite between ourselves, has been a great relief to the editorial staff.

The Architectural Association Athletic Club is another very popular institution, and is divided into various sections, such as Rugby "footer," hockey, cricket, golf, and swimming. It is very well supported by the younger men, and now has an excellent ground of its own at Elstree. . . .

We have had some excellent shows, such as a collection of ½-in. details and photographs of various important buildings in London and elsewhere; a "London" exhibition, arranged in conjunction with the London Society; and an exhibition of sketches and working drawings by the late Mr. Norman Shaw. Now, the Council have entrusted me with the task of organising an exhibition of French drawings, in conjunction with the Société des Architectes Diplômés of France, which will be the first exhibition of its kind held in this country, or even in France, I believe. It will be of very considerable interest, as it is intended to show by a selection of prize and other drawings the work done at the École des Beaux-Arts of France, from the entrance examination, through the "second" and "first" class of the school, to the drawings submitted in the final examination for the diploma granted to successful students by the French Government. I also hope we shall be able to include working drawings by some of the leading French architects of the present day.

Before this exhibition takes place we shall send a copy of the illustrated catalogue to all the provincial societies, and we hope that many of you will come up to see the exhibition.

The scheme has aroused considerable interest in Paris, and a number of well-known French architects have signified their intention of coming over for the opening day of our show, and will probably spend a few days over here "seeing the sights."

I hope to be able to arrange a return exhibition of some of our students' work, and the Royal Institute of British Architects have kindly informed me that they will do all they can to assist this proposal.

I tell you these things we are doing as illustrating some ways in which an architectural association can help forward the cause of architecture in England.

Perhaps you think that there is not a very clear connexion between an exhibition of French architects' drawings and the advance towards a national school of architecture in England.

It has been suggested to me that we have quite enough of French methods already, and that this exhibition will still further denationalise our native art.

With this pessimistic view I do not in the least agree, for consider what the effect of this exhibition will be. For the first time in England we shall have the opportunity of seeing for ourselves the result of a thoroughly organised training in "the mistress art"; we shall see the result of training students to reason in terms of architecture, and then I hope we shall be able to learn wisely, for we have in the Architectural Association School the germ of a national school on thoroughly sound English lines of which we have reason to be proud.

Our School has been wittily likened to a "job" on which there are three foreman and one bricklayer. It does not worry me at all. But we look to you men of the allied societies to send more workmen on to the job, and I think we shall not look in vain.

The secret of success to-day is co-operation. Before we can influence the public and teach them how to appreciate good architecture we must agree amongst ourselves, we must keep in touch with each other, endeavour to have some common ideal and some means by which we may speak with one voice in such matters as the recent dispute about St. George's Hall, Liverpool, for instance. To achieve this end I have a scheme to put before you at which Mr. Yerbury, our energetic Secretary, and I, have been working for some months. We think it will be a great thing. And I hope that you will make any suggestions which occur to you, in the subsequent discussion, for the improvement of the scheme. To enable you to do this I will now unfold our plan.

During one of the few fine week-ends of last summer we had the pleasure of spending a week-end in Liverpool, where we visited the fine buildings of that city under the guidance of the Liverpool Architectural Society. By a happily-planned circumstance our visit was arranged to coincide with that of the Architectural Association of Ireland. It was a delightful week-end, and, although our Liverpool brethren gave us a strenuous time, we all appreciated their kindness, and many of us came away the richer by several friends.

This is the sort of thing which seems to me work well worth doing; we must have more of these week-end visits. And that brings me to the scheme I mentioned just now, which simultaneously suggested itself to Mr. Yerbury and myself as the result of a conversation we had during this Liverpool visit with Mr. Allberry of the Architectural Association of Ireland.

I will not trouble you with the history of this plan for extending the circulation of the *Journal*, which those of you who belong to our London Architectural Association have thrust upon them once a month at somewhat irregular intervals, and which one or two of you perhaps read; in a word, the Architectural Association *Journal*.

As you know, I have been Editor of this *Journal* for about two years, and during that time we have tried to make the *Journal* a real, live force, truly reflecting the life of the Architectural Association. The papers read at our meetings (and reported in our contemporaries), like the poor, are always with us; but we have striven to preserve a just balance with articles—illustrated whenever possible—and items of particular interest to our own members; in our Editorial remarks we have endeavoured to express the views of the Association as a corporate body, and it has been a very special pleasure to have letters and personal thanks for views thus expressed, and for news of those at home, from readers in the United States, Canada, South Africa, and other distant lands.

Occasionally, too, we are able, by a little timely chaff, to correct tendencies (such as that of self-advertisement) likely to prove injurious to our profession in a manner which could not be undertaken by any other professional journal; in a word, we represent the architects of the younger generation.

The scheme in which I hope your Association will co-operate with us is that of extending the circulation of this *Journal* of ours to the members of all the provincial societies in England, Scotland, Wales, and Ireland. In return for a certain cash payment we shall arrange to supply to local associations the number of copies they require each month, and as near the beginning thereof as shall be humanly possible. . . .

The suggestion which I want you to consider is the urgent need of closer co-operation between our societies. I should like to see an annual conference of all associations, when papers and discussions on various important matters connected with our profession could be dealt with. We shall never succeed in educating the public until we agree among ourselves and speak with one voice on questions of public policy.

THE ARCHITECTURAL ASSOCIATION:

FIFTH SPRING VISIT.

ON March 8 a party of members of the Architectural Association paid a third visit of inspection to the new buildings of King's College Hospital at Denmark-hill. The general design and scope of the hospital were described in the report of the visit made on March 16, 1912. Since that date considerable progress has been made with the ward blocks and operation-rooms. Some of the former are now structurally complete, and it is hoped that before the end of the year it will be possible to open the first portion of the hospital for use. This will comprise the outpatients' and administration departments, six of the nine ward pavilions, operating theatre blocks, isolation block, pathological wing and medical school, and the chapel and central station, with their accessories. It is now possible to form a pretty accurate judgment of the probable working of the highly ingenious and careful planning, which (as usual in English practice) is largely devoted to overcoming difficulties arising from a site not specially fitted for its purpose. It appears that a considerable measure of success has attended Mr. Pite's efforts, and, notwithstanding the large proportion of the ground area which is covered with buildings, there is singularly little sense of crowding, and all rooms and corridors seem to be well lighted. Only a few samples of the internal fittings have yet been installed, but the utmost care has evidently been taken in planning their positions, and as far as possible all pipes have been

excluded from the interior of the wards, being run in special chases in deep-splayed external window reveals with removable cement slab coverings for access. By this means not only is a great deal of harbourage for dust and germs obviated, but a more sightly interior effect is rendered possible—surely a factor in the comfort of some, at least, of the patients.

The members were conducted over the buildings in groups by Mr. Pite and his assistants, a method which rendered it possible that all should learn considerably more of the aims and objects of the design than when an unworkably large party is formed. The ferro-concrete construction was viewed with interest in various stages, and considerable notice was taken of the planning of the sanitary turrets to the wards, which in liberality of space allowed almost attainment to continental standards, by which the crowded, hole-and-corner arrangements usually considered sufficient in this country for disposal of sinks and utensils appear grotesquely inadequate. A characteristic detail is the gathering together of all the ventilating pipes from the various sanitary appliances in each turret to discharge together through a central lead outlet forming a finial to the pyramid roof. Many other necessary details of current hospital practice, usually abandoned as frankly hideous, have by thought and attention been compelled to assume relative shapeliness. It would be interesting to see Mr. Pite's ferro-concrete chapel when complete, as a real effort appears to have been made to express the actual qualities of the construction.

The visit was altogether a most successful one, and Mr. Pite's appreciative references to his staff and others associated with him in the production of the work were much appreciated by members.

ARCHITECTURAL SOCIETIES.

Leeds and Yorkshire Architectural Society.

A general meeting of this Society was held at the Institute, Cookridge-street, Leeds, on March 6. The President, Colonel A. E. Kirk, A.R.I.B.A., occupied the chair. A lecture on "Standards in Reinforced Concrete Design" was delivered by Mr. Wm. Black, of the Kahn Concrete Syndicate. Mr. Black showed methods of calculating and designing concrete beams, columns, etc., illustrating his remarks by diagrams and sketches. A number of lantern slides showing works completed or in course of construction were shown. The lecturer did not advocate the building of external walls completely in concrete, but the method to adopt was to build up a frame-work of concrete lintels and piers and fill the interspaces in with brick, stone, terra-cotta, etc. After a discussion Mr. Hoffman Wood proposed, and Mr. Wm. Whitehead, A.R.I.B.A., seconded, that a vote of thanks be accorded to Mr. Black, which was heartily carried.

Glasgow Architectural Craftsmen's Society.

At a meeting of this Society, Mr. A. H. Purdie presiding, Mr. Peter Lyall delivered a lecture on "Paving." The lecturer said that several cities had paved streets before the Christian era. Nevertheless, those which were at present the ornament of Europe (Rome excepted) were destitute of them till almost the twelfth or thirteenth centuries. The Carthagians were the earliest roadmakers, and their example was copied by the Romans. Of modern cities the oldest pavement was commonly ascribed to Paris; but it was certain that Cordova, in Spain, was paved in the middle of the ninth century, and Paris about the twelfth century. Historians asserted that London was not paved in the eleventh century. The earliest paved causeway in Glasgow was down the centre of the Saltmarket, the sides being left in rough cobbles. Candleriggs was done about 1776, and with the exception of Planestanes, in Trongate, all the other streets were covered with rough cobbles. Good roads were absolutely necessary to modern convenience, and the lecturer described the materials required and various methods of constructing roads and pavements.

Architectural Association of Ireland.

An ordinary meeting of this Society was held at 15, South Frederick-lane, Dublin, recently, Mr. L. O'Callaghan, and afterwards the President, Mr George L. O'Connor, F.R.I.A., in the chair. Mr. Richard Coulson, F.S.I., read a paper on "The Principles and Design of Reinforced Concrete," in the course of which he said that during the past few years the combined materials had become inseparably connected with architectural and engineering work throughout the Kingdom. The lecturer, having made a number of experimental tests to prove the utility of steel reinforcement in concrete beams, proceeded to describe the various formulæ from which the strength of the different members is calculated, and pointed out that the mathematical work involved is now being simplified by the adoption of curve diagrams. The paper was fully illustrated by a series of lantern views of several reinforced concrete structures at home and abroad, the photographs of the Waterford Bridge at various periods of construction being particularly interesting. The lecturer concluded by stating that, while reinforced concrete is extremely useful in foundations, piles, retaining walls, floors, and roofs, he did not deem it suitable for domestic work.

Mr. J. Howard Pentland, R.H.A., in proposing a vote of thanks to the lecturer, said he thought the factor of safety often adopted was really a sham, and, as so much of the strength of the material depended on the quality of its component parts, and on the personal element in the mixing and erecting, he considered it unwise to adopt reinforced concrete for piers bearing a heavy cumulative load. There were several opinions as to the treatment of reinforced concrete with a view to external effect, but he thought it must always be clothed with masonry, brick, or faience.

Mr. Burke seconded, and said he thought that every architect should know how to design a simple, straightforward building in reinforced concrete, and that the subject was so vast that further opportunities for discussion should be afforded.

THE SURVEYORS' INSTITUTION:

BUILDING BY-LAWS AND REGULATIONS.

On Monday evening at the Surveyors' Institution, the Hon. E. G. Strutt (President) in the chair, an interesting discussion took place on papers which were read at a general meeting of the Institution on February 10—*i.e.*, (1) "Building By-Laws and Regulations as Affecting the Housing of the Working Classes," by Mr. William Woodward, F.R.I.B.A.; and (2) "Some Urban Housing Problems," by Mr. Montagu Price Holmes.

Mr. William Menzies, who opened the discussion, remarked that the present state of affairs was that by-laws which were nothing more nor less than copies of the Local Government Board's model by-laws which were issued just after the passing of the 1875 Public Health Act were in force in a number of purely rural districts, and it was admitted on all sides that they were not applicable to such districts. In reality there was not any power other than the voice of the local Councillors to bring about the amendment of their unsuitable by-laws. If the Councillors said "No," then there was an end of it. If they would not alter their opinion, there was no means of forcing them to change their minds. The Local Government Board could only ask or suggest by circulars that revision might be advantageous, but how many authorities had availed themselves of the opportunity thus afforded them of modifying their by-laws he did not know. It appeared to him that the time had come when more driving power was required, whether it be by an Act of Parliament direct or by the Local Government Board, or the County Councillors under statutory powers as outlined in Mr. Stanier's Bill to enforce the alteration of existing by-laws, where it was evident that alterations were required. He candidly admitted that whatever relaxation might be made in the rules, which were considered too stringent, he was not so optimistic as to think that that was going effectually to solve the difficult problem of providing suitable houses in rural districts at a low rent for the poorest of our labouring classes, and at the same time return a reasonable interest to the man who built. He was not an advocate for entirely doing away with any control over the erection of buildings, and certainly not in the case of those intended for habitation. The question arose in his mind as to whether it was not time that some general rules applicable to the whole country for ensuring healthy dwellings should be enforced by Act of Parliament. He ventured to think that the members of the Institute would agree with him that amongst other essentials dryness of the dwelling should be secured, ground air should be prevented from entering it, and habitations should not be huddled together, but each should enjoy the inestimable blessings of light and air. Dwellings erected on garden city lines, admirable as they might be both in planning and picturesqueness, did not, as far as he could see, get at the root of the difficulty of housing the poorer classes.

Mr. W. R. Davidge said he thought they would all be at one with the authors of the papers in their desire for some simpler method of dealing with the ordinary means of control over the erection of buildings. At present there was undoubtedly too much "red tape" both in London, and possibly still more so in the country in this connection. His own idea was that something must be put in the rules to give some control over the beauty of the surroundings, if not the beauty of the building. He thought it was absolutely essential that whoever had charge of the supervision of the building plans should have some sort of control in the way of eliminating the unfit. He agreed with Mr. Woodward that latitude was necessary, and that the individual in control, whoever he might be, must be given very wide powers to use them in a common-sense way. There undoubtedly must be some system of appeal, and he thought that the suggestion of having a tribunal based on the London system, composed of an architect, a surveyor, and one other person, was a good one. He was afraid, however, that it would be impossible to institute such a tribunal in every little village, and he thought there would be need for the grouping of villages and small towns. With regard to the exemption of Government property, he quite agreed with Mr. Woodward that if they were to have restrictions, particularly if they were to be common-sense restrictions, they must restrict everybody and everything. Before they rushed wholeheartedly into accepting Mr. Woodward's suggestion they must remember that at present with by-laws a builder had a general sort of notion what he could do and what he might not do, but if they had the latitude that was foreshadowed by Mr. Woodward they would not know in any particular case how far they could browbeat the official or how far they could get round him. With regard to Mr. Holmes's paper, that gentleman had pointed out that garden cities were only a sign of the times. People nowadays wanted something better than a mere habitation; they wanted some sort of share in the open country. There ought to be some means of crying a halt to the stereotyped monotony of street after street of houses all built on the same pattern, and there was no reason why cottages should not be grouped together anywhere within twenty or twenty-five miles of London, instead of being huddled together as they were now. He was in sympathy with Mr. Woodward in the scheme he had outlined for improving the southern side of the River Thames, but he felt he had not gone far enough.

Mr. H. Hendricks also complimented Mr. Woodward on his Embankment scheme. With regard to the author's suggestion to get rid of the Local Government Board by-laws and to appoint a professional gentleman who should be able to pass building plans, he was afraid there were practical difficulties that might arise in provincial towns, as the men who held such posts would have an undue advantage over their professional brethren practising in the same town. With regard to working-class dwellings, what was wanted in the large manufacturing towns was houses of one, two, and three rooms; and it was impossible to build such houses under the modern by-laws. Passing to Mr. Holmes's paper, Mr. Hendricks said that in Birmingham at the present time, outside what they called the central fringe, there was a vast area of land which had practically become derelict. It was too expensive for houses, and was not required for manufacturing premises, and he thought some plan might be evolved by which those who owned such land should have some use made of it at a fair market price. The large blocks of flats had been tried in Birmingham, and had proved a ghastly failure, and they had come to the

conclusion that what was required was a house containing six rooms to let at 6s. or 6s. 6d. a week.

Mr. C. Osenton said that, speaking as one who practised in a rural or suburban district, he wished to break a lance with Mr. Woodward in favour of some of these much-maligned by-laws of the Local Government Board. He thought that gentlemen like Mr. Woodward and other prominent architects were apt to overlook the fact that these by-laws were imposed not to assist building, but to prevent unsound building and to protect the public against the work of the unscrupulous builder. In that respect he thought it might be claimed that they had served a very useful purpose. The speculative builder, as far as design was concerned, had been allowed to build what he liked, and they had the result in the long, monotonous streets, with houses all of one pattern, to which previous speakers had called attention; and it was only the existence of these by-laws which had saved the people from having to live in unsound and unhealthy houses. After all, they did know where they were in regard to the existing by-laws, whereas if they had a series of by-laws where it was sufficient for the builder to send in a sort of general notice saying he was going to build in a certain way the public would have no protection against the jerry-builder. With regard to the tribunal suggested by Mr. Woodward, he thought it was quite bad enough to be under the local Council and the local Surveyor, and if they were to be under the three gentlemen proposed by the author then he was afraid that, instead of being chastised with whips, they would be chastised with scorpions.

Mr. R. M. Kearns remarked that, in his opinion, they needed more building by-laws instead of fewer, and persons who could not afford to build properly in conformity with the by-laws should not be allowed to build at all.

Mr. G. L. Pepler said that what they wanted was standardisation as regarded air space, building materials, and heights of rooms.

Mr. G. Corderoy disagreed with Mr. Pepler as to standardisation, which he said was apt to be overdone nowadays. What would be very necessary in certain districts where there was low-lying land and water logging would not be required in places where there was a rock or dry sand foundation. It was the mania for standardisation which was at the bottom of the criticism of the by-laws passed by the Local Government Board, and he thought it was the vice of all central authorities to attempt to standardise. What was wanted was far larger latitude on the part of the supervising authority, and that person should be a man of practical experience.

Mr. Horace Cubitt, Mr. A. E. Bayliss, and Mr. Allen having briefly spoken,

Mr. Woodward, in the course of a short reply to the various criticisms, said that the whole subject centred on the desire to build cottages at low rents, which should be fairly remunerative. It might be thought, from some of the speeches that evening, that he was in favour of jerry building and of letting the poor live in unhealthy dwellings. He need hardly say that was absolutely contrary to his intentions and wishes. He had always been in favour of good building, and he believed that good building could be obtained and that cottages could be obtained at rents which the labourer could pay, and which would pay the speculator if only they could get rid of these volumes of Local Government Board by-laws, which made one's head ache only to glance at, let alone to comply with. As to his proposed scheme of substitution, he did not propose to have a tribunal set up in each village; there would be districts apportioned, where there would be an architect, a surveyor, and a builder. The builder would submit his plans and specifications to them, and they would pass criticism upon them. General rules and regulations, of course, would have to be made for the guidance of the tribunal. These would be compiled by professional men, and, as he had pointed out in his paper, they would be about one-twentieth the length of the Local Government Board's by-laws, but all sufficient to secure healthy and well-built dwellings for the working classes, having in view the particular needs and requirements of each district, both as regarded materials and workmanship. He strongly objected to standardisation as suggested by Mr. Pepler.

Mr. Holmes also briefly replied, and the proceedings terminated.

GENERAL NEWS.

Good Friday Week.

In consequence of the Easter Holidays, we go to press a day earlier than usual next week, the *Builder* being published on Thursday. All communications must reach the Editor by first post on Wednesday morning.

Knight of St. John of Jerusalem.

In the *London Gazette* of March 4 appears the name of Mr. Reginald St. Aubyn Roumieu, A.R.I.B.A., appointed a Knight of Grace of the Order of St. John of Jerusalem in England, by sanction of the King. Mr. Roumieu is the elder son of Mr. Robert Lewis Roumieu, F.R.I.B.A., and a great-grandson of Abraham Roumieu, who was in practice as an architect in London in 1769. This year Mr. Roumieu is President of the Huguenot Society of London.

Prudential Insurance Company's Annual Report.

We have before us the annual report of the Prudential Assurance Company, which, as usual, bears ample evidence to the enormous success of the company's methods of conducting its business. As illustrating the way it meets new requirements we may note that, finding there was a considerable demand for voluntary sickness insurance in addition to that provided by the Act, two special tables have been provided, one to cover the waiting period and one to provide supplementary sickness benefit, and that both these tables were favourably received, 27,195 policies being in force at the end of last year.

Grosvenor Chapel, South Audley-street.

The designs for the proposed improvements in the east end of the church have been prepared by Mr. J. N. Comper. They embody the removal of the present choir stalls, shifting of the pulpit westwards, and the erection of a new altar, a screen about 30 ft. to the west of the present altar (for a chapel), and the erection of a baldacchino as an architectural feature. Sitting in the Consistory Court on February 11, Sir A. B. Kempe, Chancellor of the Diocese of London, granted a faculty for the scheme, but without the baldacchino, in view of a precedent of 1873 (St. Barnabas, Pimlico): notice of appeal was given in that respect. Grosvenor Chapel was built in 1730, after the classic manner, for about 1,000 sittings, and the interior was beautified forty years ago.

The Stead Memorial.

The President of the Royal Society of British Sculptors, Sir George Frampton, R.A., has accepted from the Executive Committee of the Journalists' Fund for the provision of a memorial to the late Mr. Stead a commission to execute a medallion portrait on a tablet, in bronze, which is to be placed in a position granted by the London County Council on the Thames Embankment.

Church Building Society.

The Incorporated Church Building Society held its usual monthly meeting on the 20th ult. at the Society's House, 7, Dean's-yard, Westminster Abbey, S.W. Grants of money were made in aid of the following objects, viz.:—Building new churches at Llandrillo-yn-Rhos, St. George, Denbighs, 150*l.*; Rastrick, St. John, Yorks, 100*l.*; Aldersbrook, St. Gabriel, Essex, 150*l.*; Bristol, St. Ambrose, 175*l.*; and West Fordington, St. Mary, Dorset, 200*l.*; and towards enlarging or otherwise improving the accommodation in the churches at Harescombe, St. John, Glos., 20*l.*; Lydbrook, The Holy Jesus, Glos., 25*l.*; North Marston, St. Mary, Bucks, 50*l.*; Zeal Monachorum, St. Peter, Devon, 20*l.*; Birkenhead, St. Matthew, 80*l.*; and Groombridge, St. John the Evangelist, Kent, 35*l.*; Grants were also made from the Special Mission Buildings Fund towards building mission churches at Appledore-cum-Ebony, Kent, 20*l.*; and Bungalow Town, Lancing, Sussex, 25*l.* The following grants were also paid for works completed:—Hanley, All Saints, Staffs, 200*l.*; Mottingham, St. Andrew, Kent, 50*l.*; Watford, St. Michael and All Angels, Herts, 150*l.*; Kentish Town, St. Silas, Middlesex, 150*l.*; Leytonstone, St. Margaret, Essex, 20*l.*; North Tidworth, Holy Trinity, Wilts, 20*l.*; Rye Harbour, The Holy Spirit, Sussex, 50*l.*; Clapham Common, The Holy Spirit, Surrey, 200*l.*; Groombridge, St. John, Kent, 15*l.*; Llanfwrog, St. Mwrog, Anglesey, 25*l.*; and Bridgmary (Elson), Hants, 35*l.*

BOOKS.

The Story of Architecture in Oxford Stone. By E. A. GREENING LAMBORN. (Oxford: Clarendon Press. 1912. Price 3s. 6d. net.)

THIS is a short history of Gothic and Renaissance architecture with examples taken from Oxford and its neighbourhood. It is written with knowledge, and a predilection for the Gothic style. It is perhaps not a little handicapped by erudition, and a rigid adherence to the principles of constructive necessity as the legitimate author of architectural form. The application of the Greek Orders to the Roman practice of lining a concrete building with decorative forms, or materials, we are loath to characterise as a "constructive lie." It came about naturally in the development of mixed traditions. Again, although it is true that Gothic architecture progressed along the lines of necessity, as dictated by the vault, we are inclined to challenge such a statement as the following:—"It may be objected that the great majority of Gothic buildings are not vaulted at all. The answer is that they are not representative Gothic, but only buildings with Gothic details." This is the eclecticism of the Classic Renaissance. The greatest periods of building enterprise have always displayed a freedom from any accepted formulæ. In all other respects the book may claim a creditable place in the list of the best-informed guide-books. Its chapters, or sections, are arranged under the heads of Plan, Wall, Pier, and so forth, and the reader may study these details in a comparative manner, while visiting the examples named.

The Church of Saint Eirene at Constantinople. By WALTER S. GEORGE, A.R.C.A., Architect, Soane Medallist. (Oxford University Press: Henry Froude. Price 2*l.* 2s. net.)

THE interests of Byzantine architecture are at the moment receiving a generous recognition. The volumes by Mr. Alexander Van Millingen and Sir Thomas Graham Jackson have quite recently been noticed by us. The former contributes an historical preface to the present work.

Saint Eirene is one of the churches built by Justinian. Constantine had previously erected a church on the site, which served as the cathedral of the city, until the completion of Santa Sophia in 360. It was burned down in 532. A further fire occurred shortly after the completion of the new church, and an earthquake shattered the structure in 740. Further operations have been carried out under Turkish rule. The building as we see it to-day therefore displays work of different periods. The plan and construction is typically Byzantine. A square divided into three parts each way, with narthex and atrium, describes the plan; a central drum and dome, its thrust counterpoised by semi-dome, flat, or barrelled vault, and abutments that fall within the building line, are characteristic of the elevation. This conservation of energy, habitual to Byzantine building, is in direct contrast with the Gothic method. In the words of M. Choisy, which the author quotes, "In a general way the employment of masses, the exclusive object of which was to counteract the thrust of the vault, appeared to the Byzantines a poor, and almost a barbarous proceeding." The volume, which is amply illustrated, embodies the results of the most exhaustive survey, and forms a notable contribution to the literature of this subject.

Building Stones and Clay Products. A Handbook for Architects. By HEINRICH REIS, Ph.D., Professor of Economic Geology in Cornell University, Fellow Geological Society of America. (New York: John Wiley & Sons; London: Chapman & Hall. Price 12s. 6d. net.)

To English readers the interest of a technical work which has been compiled from American data and primarily intended for the use of American architects is necessarily comparative rather than actual, where it is of interest at all. The only portions of this book by Dr. Reis which are equally applicable to both sides of the Atlantic are the general notes on lithology which occupy the earlier pages, and these have been carefully put together and perhaps more clearly expressed than in any existing English work which an architect would be likely to consult. These do not, however, present any novel feature, and they are followed by detailed descriptions of the principal stones which are

quarried in the United States. The variety of these would be astonishing if the great extent of the territory over which they are distributed were not remembered, and in this connexion the carefully-prepared maps showing the local distribution of the main classes of stones are helpful. Coarse and fine granites, slates, good sandstones, and most classes of limestones (including some beautifully veined marbles), are all procurable, except that oölites, largely used by us, are few and apparently soft.

The later chapters, which are devoted to the consideration of clay products, are scarcely so important as those which have gone before, for they indicate that, in some respects at least, American practice is several years behind that which obtains in the best works in England. The continuous kiln, used almost exclusively in England for high-class bricks where uniformity is desired, in conjunction with machine moulding and artificial drying, seems to be only in the experimental stage in America at present; while the author speaks of fireproofing (a term long since discarded by us in favour of fire-resisting), and illustrates a form of flat terra-cotta arching for floors which has now been obsolete in England for a considerable period. It is noticeable that the craze for multicoloured and irregular bricks has reached the United States and is just as virulently epidemic there as here just now, with the result that brickmakers, in order to meet an eccentric demand, have to sacrifice more justifiable effort towards the production of that which is sound and more truly workmanlike.

The Workmen's Compensation Act, 1906, with Notes, Rules, Orders, and Regulations. By W. ADDINGTON WILLIS, LL.B. Barrister-at-Law. Thirteenth edition. (London: Butterworth & Co.; Shaw & Sons, 1913. Pp. 370. 5s. net.)

MR. WILLIS'S excellent treatise on Workmen's Compensation is almost becoming an annual publication. The present edition is the thirteenth of "Willis's Workmen's Compensation," and the fifth since the Act of 1906 was passed, and it provides the lawyer and the layman with a clear and comprehensive text-book on this complicated subject at an extraordinarily moderate price In this volume the English, Scottish, and Irish decisions are respectively published down to the following dates: December 11, 14, and 21, 1912; and a new feature is the inclusion of a table of the terms of purchase of immediate life annuities through the Post Office Savings Bank. The Note on the Insurance Act has been also somewhat amplified. It will be remembered that under sect. 11 of that Act no sickness or disablement benefit shall be paid to an insured person in respect of sickness or disablement for which he is receiving compensation equal to or greater than the benefit he would otherwise receive.

All the features of former editions, such as a table of cases with complete references to all the reports, and an excellent Index are retained in this latest edition, which cannot fail to prove as useful as its predecessors.

The Law of National Insurance By J. H. WATTS, Barrister-at-Law. (London: Stevens & Sons, Ltd. 1913. vii. and 664 pp. 12s. 6d.) OF the making of law books on any subject of general importance there is no end, and it was only to be expected and quite natural that there should be a more than usually large crop of legal treatises as a result of the passage into and the coming into effective operation of the National Insurance Act, 1911, especially in view of the magnitude and breadth of the scope of that enactment, and the vast multitude of persons, interests, and occupations affected by its manifold and complex provisions.

The building and engineering trades, above all others, are particularly concerned in the matter, inasmuch as persons engaged in these particular occupations come within not only the provisions of the Act relating to sickness and invalidity, but also that part of it which makes provision for insurance against unemployment, which indeed applies to them more than to any other of the specified trades. For this reason if for no other we can extend a welcome to Mr. Watts' book as quite a satisfactory and useful addition to the existing bibliography on the subject. The volume now under review is one of the latest publications on National Insurance, but that does not mean that it is any the less worthy of attention and perusal, but rather the contrary. The book comprises the text of the National Insurance Act annotated and commented upon section by section, a method of treatment not only consecrated by custom but eminently convenient in practice. There are also copious appendices containing the regulations, rules, orders, etc., issued by the Insurance Commissioners and the Board of Trade. At the end of the appendices the author has set out the two memoranda issued by the Government actuaries, showing the grounds and principles on which the Bill was based.

The first part of the book consists of a general survey of the scope of the Act, in which the author has incorporated excerpts from many of the pamphlets and official explanatory leaflets which the Insurance Commissioners issued from time to time for the enlightenment of the public. This introductory survey does indeed give a very good general idea of the Act as a whole, and the book should certainly be of service, not only to legal practitioners, but also to laymen as well. The notes to the sections are adequate, and the index is satisfactory.

CORRESPONDENCE.

Indifferent Quantities.

SIR,—The evil of which your correspondent, "A London Builder," complains in his interesting letter is one which has existed since the system of tendering upon quantities became general; several suggestions for its remedy have been made within recent years, but so far with very little result.

The examples given of the differences which prevail between the quantities prepared by an independent surveyor and those prepared by an architect or his assistant could be multiplied a hundredfold, and an explanation of their existence is to be found in the fact that the attainment of proficiency in two professions, each of which takes a lifetime to learn, is denied to the average man.

In my opinion (and in this your correspondent seems to concur) an architect is unfitted by his artistic training to deal with the mass of intricate detail required in the preparation of an accurate bill of quantities, and it should certainly not be his name inserted in Clause 13 of the R.I.B.A. Conditions of Contract as the one by whom the final measurement and valuation of the variations should be undertaken. Under this clause the services of one who is to act between the parties (namely, the employer and the builder) are required, and for this purpose the employment of an agent of one of the parties seems to me eminently undesirable.

Some years ago a protest was raised by builders against an architect or engineer being sole arbitrator under a contract, which has led to a gradual discontinuance of the system, and a similar protest undertaken by some responsible body would, no doubt, result in the employment of an independent surveyor to act under the clause to which I refer above.

Your correspondent refers to a standard which should be attained by those who practise as quantity surveyors. Unfortunately no recognised standard has hitherto existed, and, pending the completion of a set of pamphlets dealing with "Method of Measurement," some modification of their grievance could be effected by a refusal on the part of responsible builders to tender for work unless the quantities are prepared by members of the Quantity Surveyors' Association, or by those members of the Surveyors' Institution who are trained and practise as quantity surveyors.

Both the Quantity Surveyors' Association, to which none but qualified quantity surveyors belong, and whose members are (under the articles) responsible for the accuracy of their work, and the Surveyors' Institution (of which, by the way, comparatively few quantity surveyors are members) are doing, and have done, all in their power to deal with the question raised by your correspondent. . . .

A suggestion for dealing with the evil is this: Let the London Master Builders' Association, the Institute of Builders, and the National Federation of Building Trades' Employers meet the Council of the R.I.B.A. with a view to the insertion of a clause in the agreed conditions of contract under which an undertaking should be given that any loss sustained by a builder owing to items of detail being omitted from a set of quantities should be adjusted at the settlement of the accounts. . . .

ARTHUR G. CROSS, F.S.I.,
Hon. Secretary of the Quantity Surveyors' Association.

SIR,—It is with pleasure I read the discussion in your pages *re* "Indifferent Quantities." Unfortunately for most of us this is only too true. Taking builders on the whole theirs is the most abused and ill-used trade there is; they have to knuckle to the owner, architect, and workmen. They have no association to protect their interests—if there is it is only confined to large towns. It is quite time a very strong Association of Builders was formed with the following objects, among others, in view:—

(1) The curtailing of cut prices.

If the architects' associations were appealed to on the matter of only inviting builders who were members of the Association to tender for their work, this would mean that every builder would join and they would always get their work done well. Then a Schedule of Charges for each district could be drawn up, and all estimates in that district would be based on same. Any member failing to do so and undercutting would be reported to the Association and no doubt expelled, which would mean loss of all contract work to him.

(2) Conditions of Contract, covering rises in prices of materials and labour.

At the present time this is not part of the usual conditions of contract. How often is it now that we have several rises during the period of a contract! We base our estimate on our merchants' prices before the job is started. Perhaps after the contract has been signed and the work started we receive notification that several prices are to be advanced, and most likely two or three of these rises take place during the period of the contract, which means a profitable job turned into a dead loss—the larger the job the larger the loss. There should be a clause in all contracts covering this, to the effect that, if a builder gives satisfactory evidence that these rises have taken place, his contract to be advanced accordingly. I should like to hear other builders' opinions on these points, also *re* a Builders' Association, as no doubt a meeting could be called at our next Exhibition with a view to forming same.

A COUNTRY BUILDER.

[**** Has our correspondent forgotten the Institute of Builders, the Associations of Master Builders, and the National Federation, and other little bodies?—ED.]

Thick and Thin Joints.

SIR,—In your issue of February 14 "A Student" seemed to be puzzled to know which joint to admire, a thick or a thin one, in ashlaring, etc., and says that one of the great authorities insists on our admiring the thick joints.

I have enclosed sketches to show the practical advantage of the thick joint, especially in heavy work, as columns, pilasters, etc., in any material where the thick joint is almost impossible to do without unless you damage the material.

For, should the joint be laid as in Fig. 1, the bed of the joint is cut hollow to get the bearing as near the edge of the material as thin as possible; that brings the weight on the outer edges and splits the material as shown at A, Fig. 1.

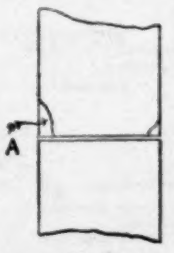


Fig. 1.

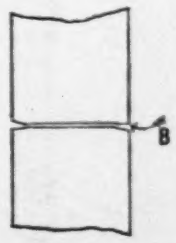


Fig. 2.

But if the outer edges of the material is slightly bevelled to make a bird-mouth joint, as shown at B, Fig. 2, to get a bearing in about 2 in. or 3 in. from the edge of the material, this would prevent the same from splitting and would show the thick joint which is so much admired.

I can point out some beautiful pieces of architecture spoiled by this thin joint failure, the stone being split as much as 6 in. up the face, and I hold with your great authority when he insists on our admiration of the thick joint, which is practically necessary.

E. SELBY HASLETT,
Architect and Surveyor.

ILLUSTRATIONS.

Winter Garden, Hotel Cecil, Strand.

OUR illustrations of this recent addition to the Hotel Cecil are in connection with the article which begins on page 321.

The National Library of Wales.

IN our issue of June 19, 1909, the drawings submitted in the competition for this building were published. Before the first contract was arranged, early in 1911, many variations were made and the whole scheme very greatly enlarged.

In our issue of July 14, 1911, the bird's-eye view of this revised design was given. The detail drawings published to-day illustrate some of the important features of the Library Hall—now building—as well as the Exhibition Hall—now about to be started. Each drawing is numbered, and on the key-plan the numbers are indicated at the points detailed. Owing to the very elevated and exposed position of the site the materials selected are of a particularly durable nature.

The lower story is of grey granite, as indicated on the details, all being carefully worked at the quarry, that for the plinth courses being from "Carnsen" and above from "Penryn"; the latter being a little lighter in colour.

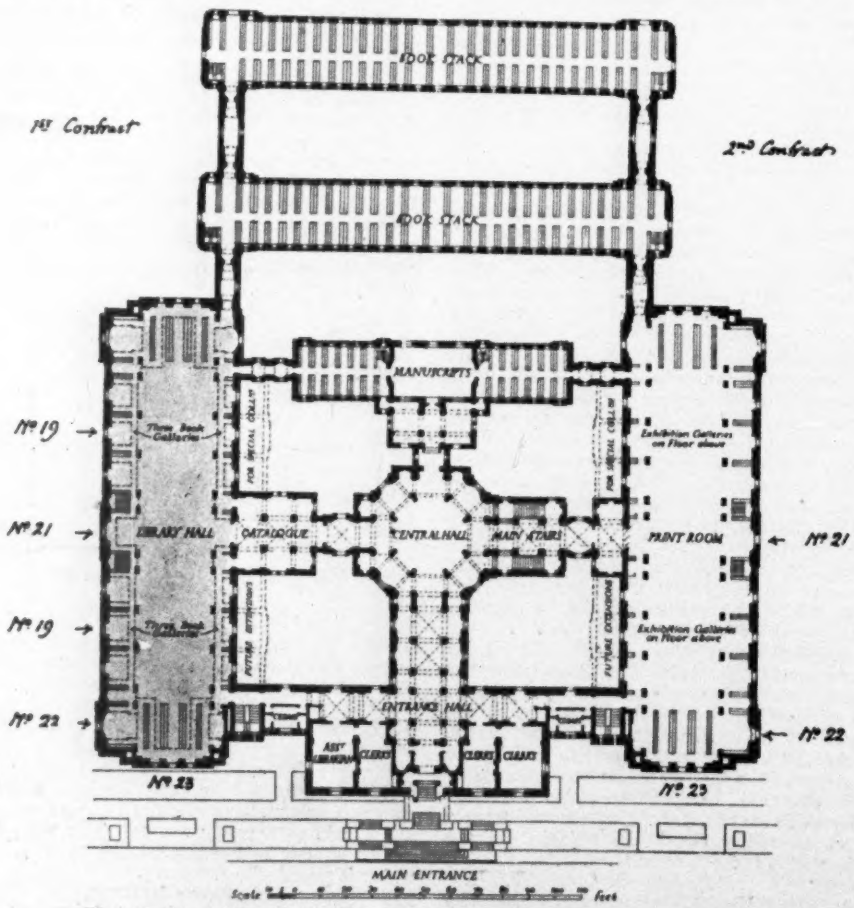
Each block of Portland is being carefully selected at the quarry, and the whole worked on the site.

In some of the elevations blue brick for the plinths and a purple brick from Buckley, near Chester, is being used with the Portland stone and granite—chiefly towards the courts.

It may be noted that all the walls are hollow The window joints both in and out are of stone, being connected at the hollow with small slips of Hopton Wood marble. The present contracts will, it is expected, be completed by the summer of 1915. There will then be erected the three sides of the quadrangle. It is then hoped that special efforts will be made to proceed with the building of the octagonal-domed Hall (which occupies the central portion of the quadrangle) and the adjoining main staircase. This portion of the building is very necessary for the connecting up of the floors of each of the other blocks, and until it is completed temporary isolated staircases will have to be used.

The front block containing the Administrative Departments, the Council Chamber, and the rooms for the President and Librarian, and the small connecting wings either side, will then be the only portions left of the main block of buildings to be proceeded with. The necessity for their erection will also be urgent, completing as they will the front façade and containing the main entrance, with the two subsidiary entrances in the wings. The great stacks at the back of the main block will be undertaken as accommodation for the storage of books, etc., becomes necessary; and when one has been erected it should give sufficient shelf-room for many years' acquisition.

The other portions of the design, such as the domed refreshment-room, with the heating, printing, and binding accommodation on the floors below, as well as the other small blocks, with the terraces and steps, would all gradually follow in turn.



The National Library of Wales, Aberystwyth: Key Plan for Details.

MEETINGS.

FRIDAY, MARCH 14.

The Royal Sanitary Institute (*Lectures for Sanitary Officers*).—Mr. A. Herring Shaw on "Details of Plumbers' Work." 7 p.m.

Leicester and Leicestershire Society of Architects.—"A Study in Local Town Planning," by Mr. Francis Morley, and Mr. N. B. Robertson on "Leicestershire Bricks and Brickwork." 8 p.m.

Architects' Benevolent Society—Annual general meeting. 5 p.m.

SATURDAY, MARCH 15.

Edinburgh Architectural Association.—Visits to (1) the Usher Hall. 2 p.m.; (2) the Edinburgh College of Art, Lauriston-place. 4 p.m.

MONDAY, MARCH 17.

The Royal Institute of British Architects.—Mr. Fernand Billery on "Modern French Architecture." 8 p.m.

The Institute of Sanitary Engineers (*Caxton Hall, S.W.*).—Dr. S. C. Lawrence, M.O.H., on "The Dwelling-House." 8 p.m.

University of London (*Victoria and Albert Museum*).—Mr. Banister Fletcher on "Belgian and Dutch Mediæval Architecture." 5 p.m.

The Royal Sanitary Institute.—Mr. W. C. Tyndale on "Calculations, Measurements, and Plans and Sections." 7 p.m.

Liverpool Architectural Society.—Mr. J. C. Powell on "Painted Glass in Relation to Architecture." 6 p.m.

TUESDAY, MARCH 18.

University of London (*British Museum*).—Mr. Kaines Smith on "Greek Art and National Life: Hellenistic Art." 4.30 p.m.

WEDNESDAY, MARCH 19.

The Royal Sanitary Institute.—Mr. W. C. Tyndale on "Sanitary Appliances." 7 p.m.

Edinburgh Architectural Association.—Mr. G. W. Tulley on "Drainage." 8 p.m.

Nottingham Architectural Society.—Social evening. Exhbn. of designs and presentation of prizes. 8 p.m.

THURSDAY, MARCH 20.

University of London (*Victoria and Albert Museum*).—Mr. Kaines Smith on "Five Centuries of Decorative Art: Minor Arts—Illumination." 3.30 p.m.

FRIDAY, MARCH 21.

Aberdeen Architectural Association.—Mr. Percy Bate on "Old English Table Glass." 8 p.m.

University of London (*British Museum*).—Mr. Banister Fletcher on "Byzantine Architecture: The Later Churches." 4.30 p.m.

COMPETITION NEWS.

It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that may occur.

The list of current Competitions is printed on page 333.

Hostel for Students, Exeter.

The conditions of this competition, of which Mr. Edwin Cooper, F.R.I.B.A., is the assessor, are not yet published, but directly they are issued we shall give details of the requirements and a plan of the site.

*** For information as to other current competitions see the previous issues.—ED.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT a special general meeting, summoned under By-law 70, for the election of the Royal Gold Medallist for the current year, and held Monday, March 3, Mr. E. Guy Dawber, Vice-President, in the chair, the Chairman moved, Mr. W. Henry White seconded, and it was resolved, by acclamation, that, subject to his Majesty's gracious sanction, the Royal Gold Medal for the promotion of Architecture be presented this year to Mr. Reginald Blomfield, A.R.A., for his executed works as an architect and for his contributions to the literature of architecture.

The special meeting then terminated.

Business General Meeting.

At a general meeting (business) following the special general meeting the minutes of the meeting held February 17 having been already published, were taken as read and signed as correct.

The decease was announced of Percy Richard Bradford, Licentiate.

A number of gentlemen were then elected under By-law 10.

FIFTY YEARS AGO.

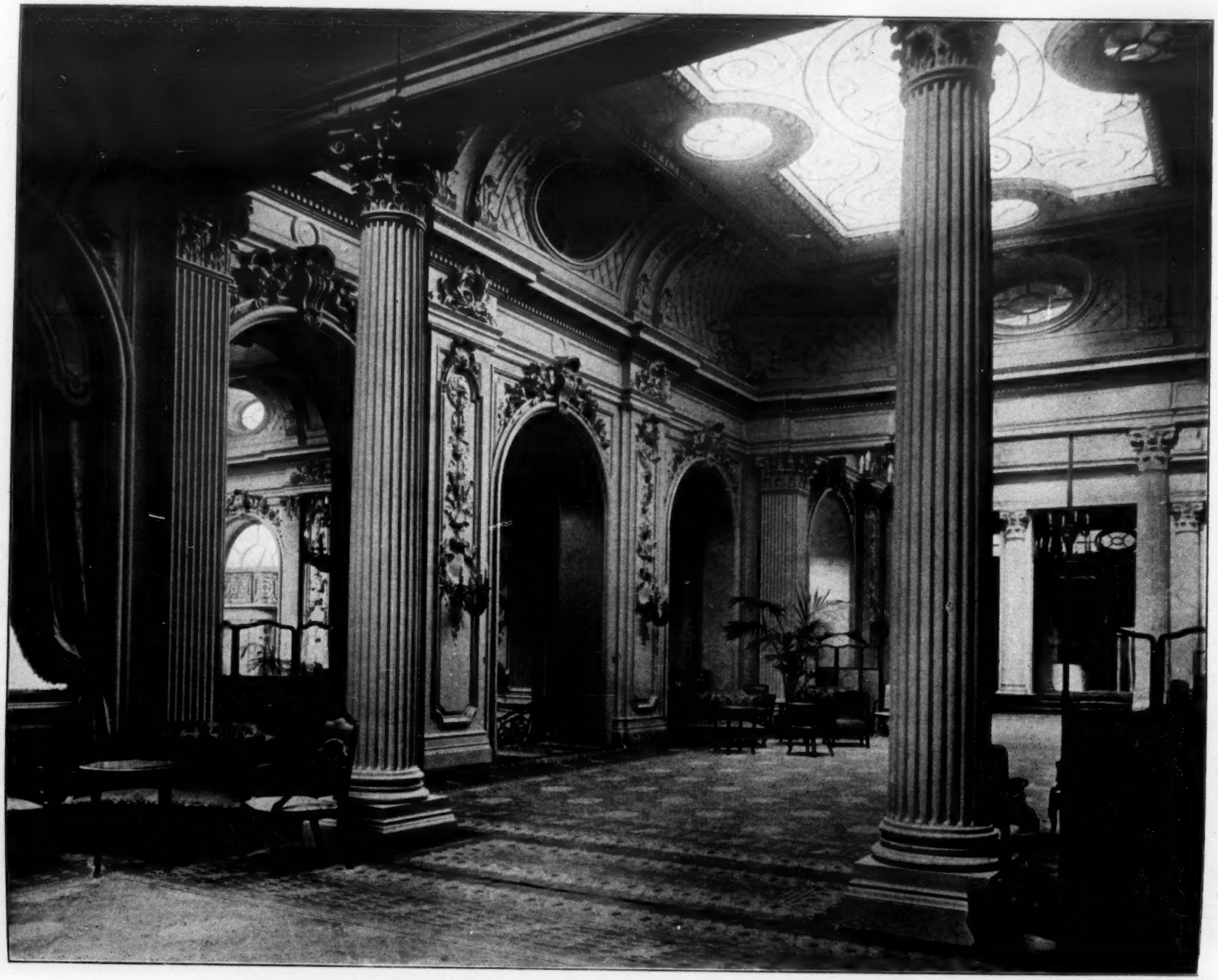
From the *Builder* of March 14, 1863.

A PARK FOR FINSBURY.—At a specia meeting of the Metropolitan Board of Works on Wednesday in last week Mr. Savage described the steps taken by the inhabitants of Finsbury in order to obtain that which they considered a public necessity. The original estimate had been 216,000*l.* for 300 acres: this was thought too much, and was afterwards reduced to 230 acres. Having failed in getting even this, it was proposed to have a park of 130 acres; but on looking at the map he found that buildings had been erected on about 20 or 30 acres which, to save expense, he proposed to leave out, reducing the area to from 86 to 100 acres, which could be had at a cost of under 100,000*l.* He then moved to the effect that the necessary proceedings should be taken by the Board towards the formation of a public park in the northern suburbs, and defining the boundaries of the ground to be purchased. After a considerable discussion, on a division there appeared—for the original motion, ten; against, ten; the casting vote being given in favour of the original motion.

*** We are afraid this shows that even fifty years ago there was not complete unanimity as to public improvements!—ED.

LONDON COUNTY COUNCIL ELECTION.

Mr. P. E. Pilditch (Strand) and Mr. F. L. Dove (Islington, North) were re-elected as members of the London County Council in the triennial election held on March 6. Mr Pilditch, who is nominated for the Vice-Chairmanship, was Chairman of the Parliamentary Committee of the late Council; Mr. Dove, Past-President of the Institute of Builders, was a member of the Asylums, Establishment, and Parks and Open Spaces Committees.



VIEW OF UPPER PALM COURT.

HOTEL CECIL, STRAND: WINTER GARDEN.—Mr. E. Keynes Purchase, F.R.I.B.A., Architect.

Sprague & Co., Ltd., Printers, 69 & 70, Dean St., Soho, W.

VIEW OF UPPER PALM COURT.

HOTEL CECIL, STRAND: WINTER GARDEN.—Mr. E. Keynes Purchase, F.R.I.B.A., Architect.

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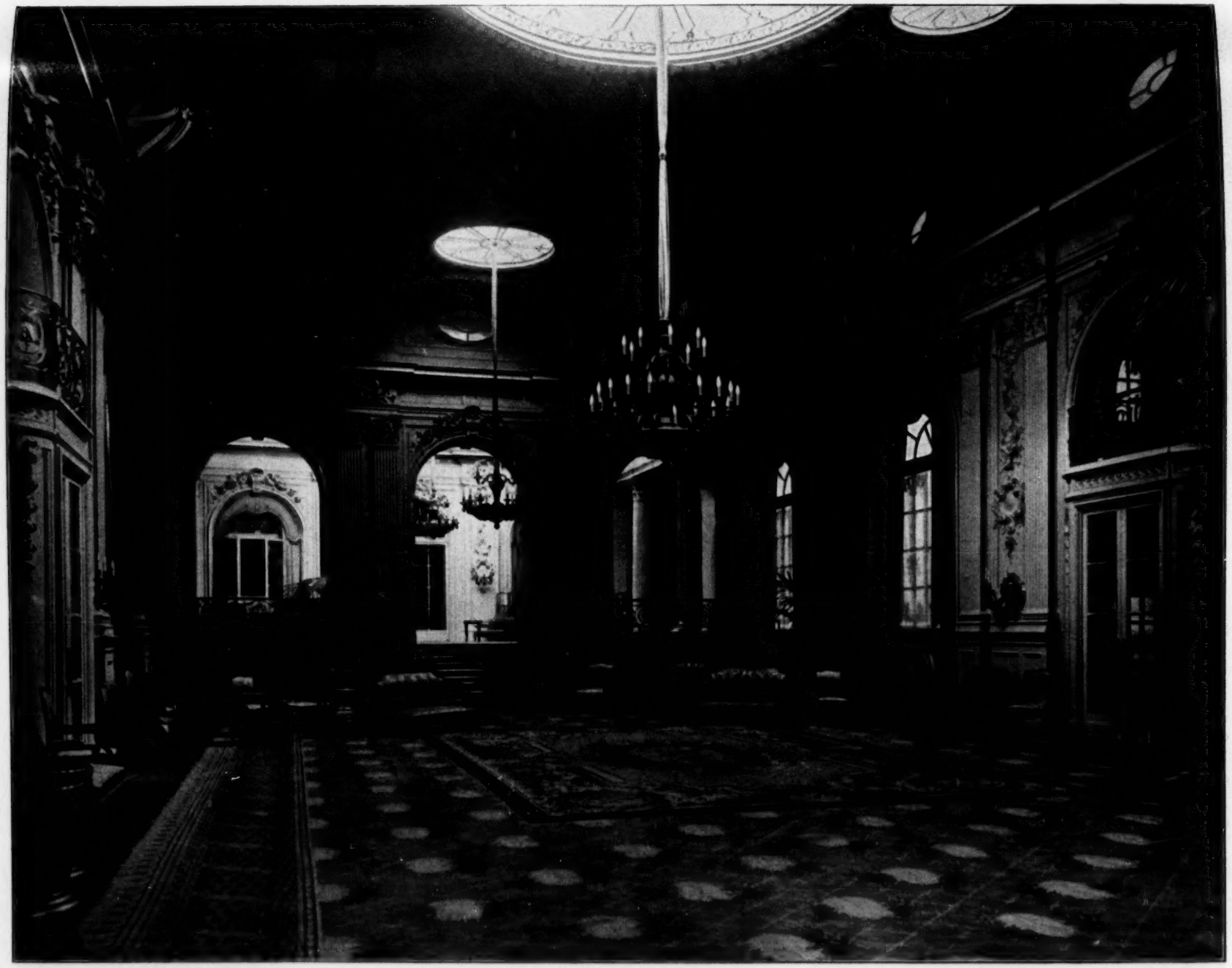
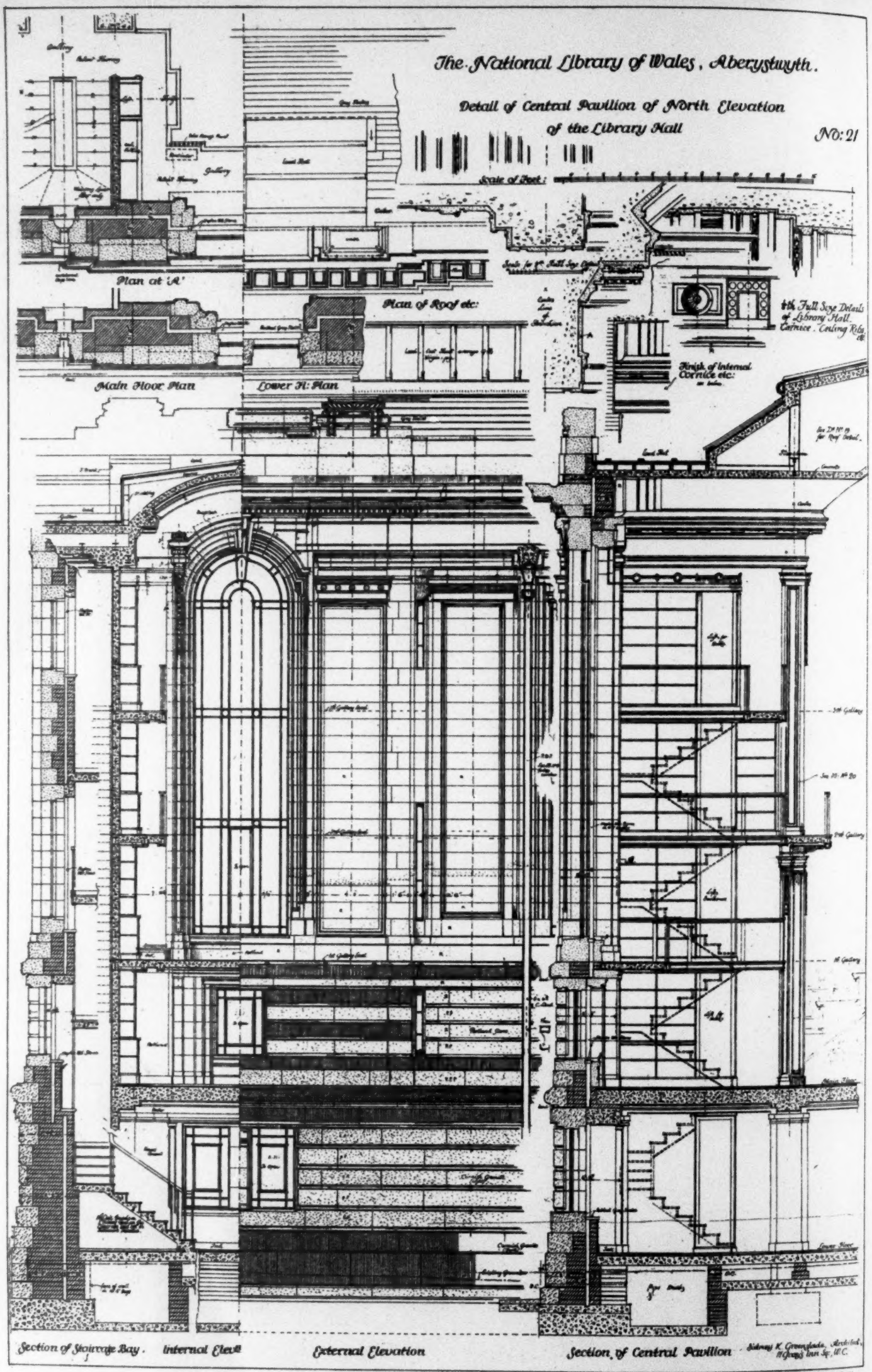


Sprague & Co., Ltd., Printers, 69 & 70, Dean St., Soho, W.

VIEW OF LOWER PALM COURT.

HOTEL CECIL, STRAND: WINTER GARDEN.—Mr. E. Keynes Purchase, F.R.I.B.A., Architect.


The National Library of Wales, Aberystwyth.
Detail of Central Pavilion of North Elevation of the Library Hall
No: 21
Scale of Feet:
Plan at 'A'
Plan of Roof etc:
Main Floor Plan
Lower H: Plan
4th Full Size Details of Library Hall Cornice, Ceiling Ribs etc
Finish of Internal Cornice etc:
Section of Staircase Bay.
Internal Elevation
External Elevation
Section of Central Pavilion
Sidney K. Greenslade, Architect, 11 Gray's Inn Sq., W.C.
PHOTO-LITHO. SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W.

THE NATIONAL LIBRARY OF WALES, ABERYSTWYTH.—Mr. S. K. Greenslade, A.R.I.B.A. Architect.

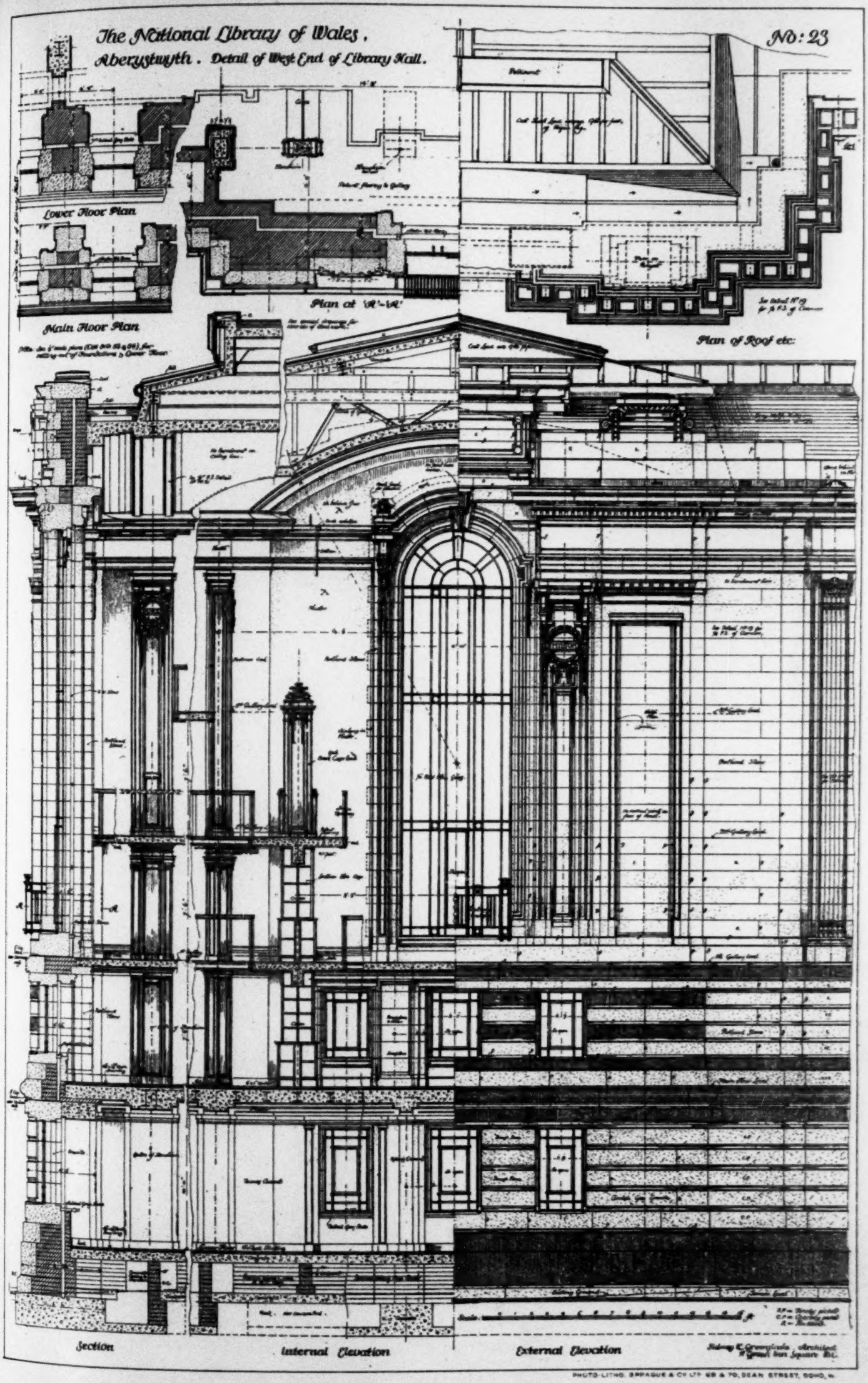


PHOTO-LITHO. SPRAGUE & Co LTD 69 & 70, DEAN STREET, SOHO, W.

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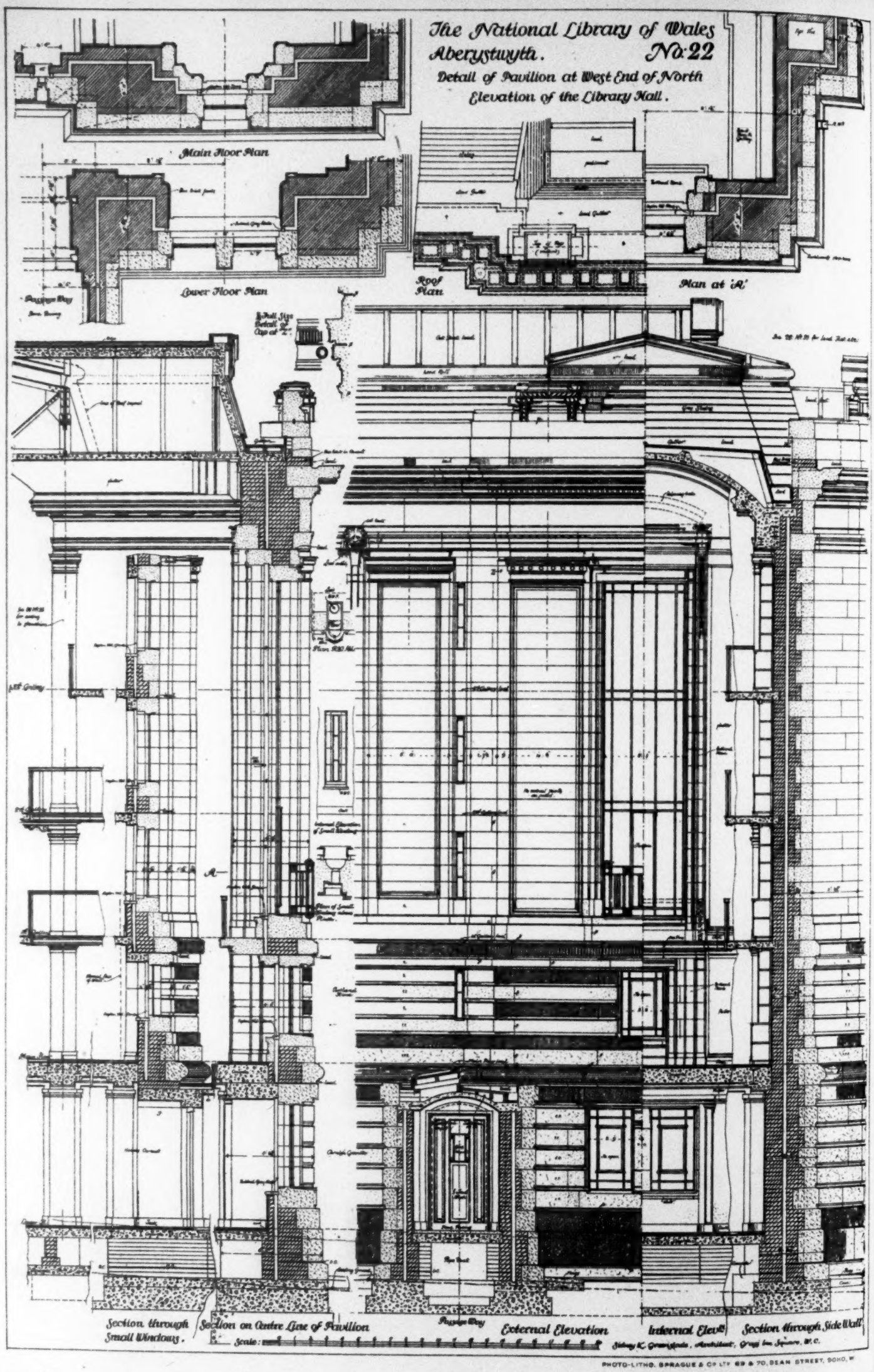

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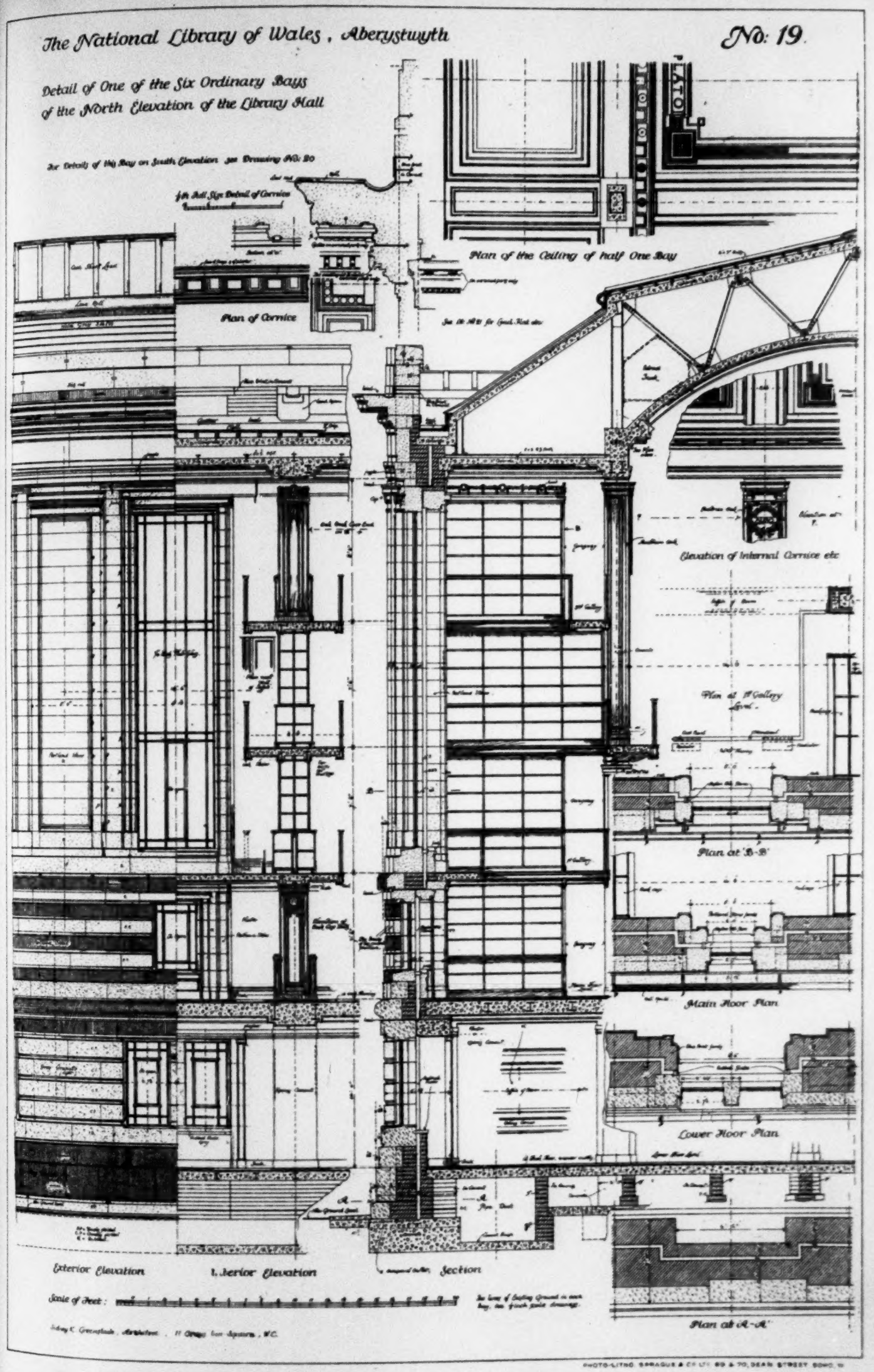
The National Library of Wales, Aberystwyth
No: 19.
Detail of One of the Six Ordinary Bays of the North Elevation of the Library Hall
Plan of the Ceiling of half One Bay
Plan of Cornice
Elevation of Internal Cornice etc
Plan at 'B-B'
Main Floor Plan
Lower Floor Plan
Plan at 'A-A'
Exterior Elevation
Interior Elevation
Section
Scale of Feet :

THE NATIONAL LIBRARY OF WALES, ABERYSTWYTH.—Mr. S. K. Greenslade, A.R.I.B.A., Architect.

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MONTHLY REVIEW · *of* · CONSTRUCTION.

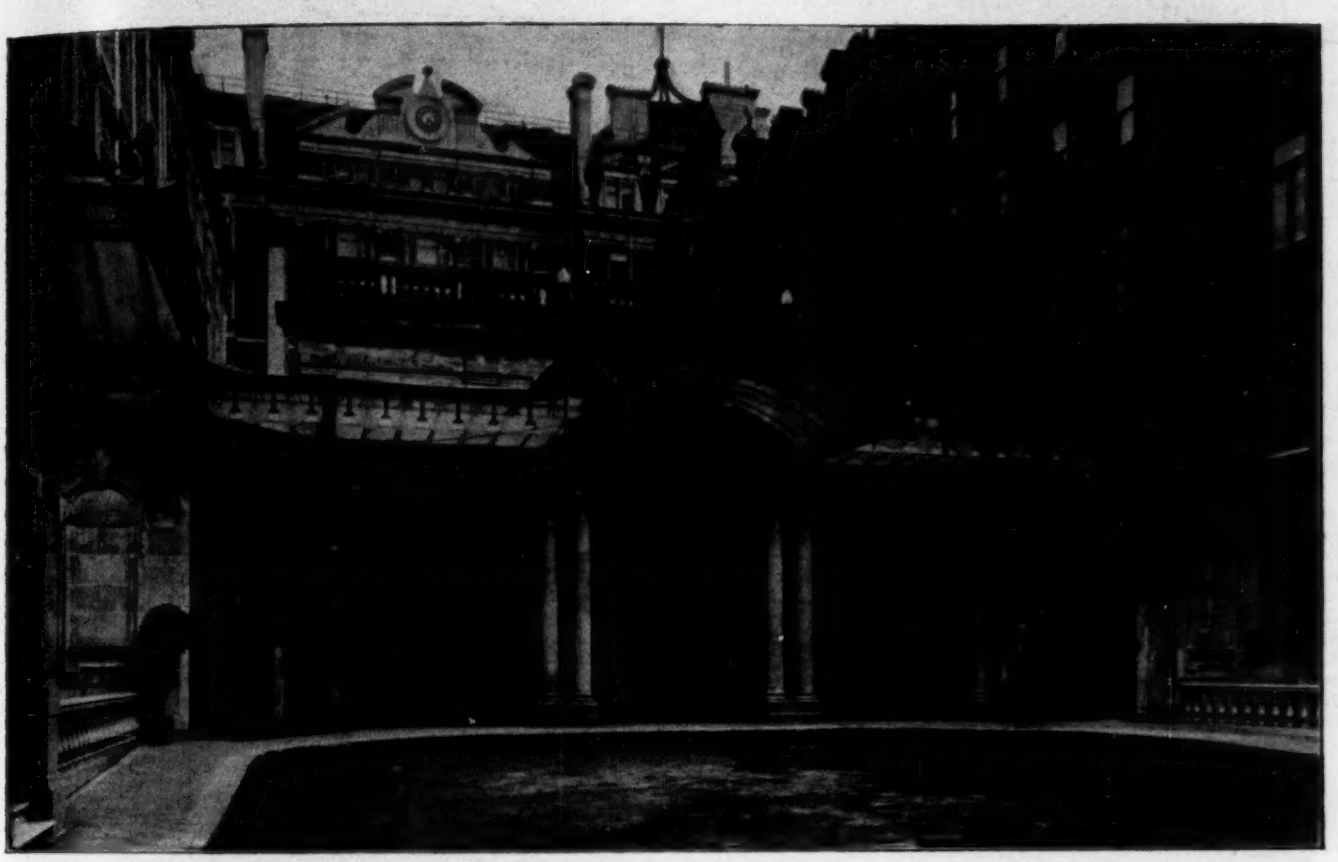


Fig. 3. Hotel Cecil, Strand. The Winter Garden: View of Elevation to Courtyard.

Mr. E. Keynes Purchase, F.R.I.B.A., Architect.

THE NEW PALM COURTS AT THE HOTEL CECIL, STRAND.

CONSIDERABLE additions and alterations have recently been carried out at the Hotel Cecil, Strand, from the designs of Mr. E. Keynes Purchase, F.R.I.B.A., and, owing to the difficulty of dealing with the existing work, the procedure was somewhat interesting from a constructional point of view. The principal feature of the scheme was the formation of two large palm courts, which were erected in the old courtyard adjoining the Strand, while many minor alterations were necessitated by the work, as it naturally involved the remodelling of certain portions of the existing buildings which were adjacent. These minor alterations included the construction of new managers' offices, between the south and east blocks, new service and cloak rooms, and a complete system of ventilation for the apartments under the courtyard.

The general plan of the scheme is illustrated in Fig. 1, which shows the new buildings erected in the courtyard, together with their position in relation to the existing work, and it will be seen that they occupy a space equal to about two-thirds of the old courtyard, and connect up the east and west blocks of the hotel, while still leaving ample space as a drive in for the traffic. The façade of the new building is illustrated in Figs. 2 and 3, which are a drawing and photographic view of the work as executed, and it will be seen that this has projecting wings on either side with a portico between, and in addition a glass roof having a projection of about 17 ft. to fully cover the footpath and visitors when alighting from a vehicle. This façade is executed in Portland stone with the Ionic Order, and a curved pediment forming a central feature, the latter having a carved *motif* in the tympanum. Five large openings are formed to lead into the grand vestibule, banqueting entrance, and luggage-room, the first named occupying a space 48 ft. long by 24 ft. wide and having a height of 16 ft. From the vestibule access is had to the lower palm court, the restaurant corridor, and a wide corridor leading to the south block of the hotel.

The lower palm court, which is situated at the same level as the grand vestibule, is a very fine apartment, having a length of 90 ft. and a width of 45 ft., with a height of 32 ft., and adjoining this and at right angles to it is the upper palm court, which is raised some 4 ft. above the lower court, and this has a length of about 120 ft. and an average width of 30 ft. Three large arched openings occur between the two courts, and they are connected by a wide flight of steps which deliver through the central opening. Some difficulty was experienced in the execution of the work owing to the necessity of keeping the hotel open for business during the period of the contract, and the whole of the hotel traffic and contractors' haulage were required to come in through the Strand entrance, great care being necessary to prevent congestion at times. The main entrance to the hotel was originally situated in the centre of the north front of the south block, and, as the upper part of the courtyard was included in the scheme, it became necessary to provide a special reception-room and entrance during the progress of the work. This was accomplished by building a temporary reception-room at the lower end of the courtyard adjoining the east block, and this had a maximum length of 36 ft. 6 in. and a maximum width of 20 ft., with a height of about 15 ft. It was required to stand during the winter months and was constructed of 4-in. hollow pumice concrete slabs, plastered on the inside and rendered externally with Portland cement and washed sand jointed to imitate stone. A hoarding was formed across the courtyard between this room and the west block, thus completely shutting off the building operations. Before this was done, however, the foundation work was carried out in sections, while the courtyard was open to traffic, and this portion of the work required very careful organisation. The method of forming these foundations is interesting, as they had to be designed to suit the various buildings below the courtyard, which are entered from the Embankment level, about 30 ft. below. These various departments comprise the laundry, bakehouses, carpenters' shops, engine-rooms boiler-rooms, and other similar offices, and it was practically impossible and far from economical to carry the stanchions and piers from the new structure right through these departments and down to the soil beneath. Some idea of the arrangement of these departments and their disposition in relation to the new work above can be gathered from the plan illustrated in Fig. 4. It will be seen that these sub-buildings are arranged with a central roadway about 20 ft. wide, and this extends right up to the underside of the courtyard as shown in the section in Fig. 5, where it is finished with a brick arch 18 in. thick. This arch abuts on the side walls, which are about 3 ft. thick and more or less continuous, having large openings into the various departments, while at right angles to these side walls and at intervals of about 22 ft. other walls of similar thickness run back on either side to the faces of the east and west blocks, these being also finished with brick arches 18 in. thick at right angles to the main arch. An intermediate floor is introduced in many cases, thus cutting the compartment up into two heights. The existing brick walls were found to be in excellent condition upon examination, and, as the arches were obviously insufficient to take the loads, a system had to be devised whereby the weights would be transmitted directly to the walls themselves in such a manner that the safe load per square foot on the brickwork would not be exceeded. A type of grillage foundation was adopted, which consisted of two layers of rolled-steel joists, the bottom layer being placed between the haunches of the side arches immediately over the walls, and consisting of three beams encased in concrete and varying in length according to the load to be distributed, in some cases as much as 16 ft. being necessary. The top layer also consisted of three beams, and these actually carried the stanchions and walls and transmitted the loads to the lower layer which was at right angles as illustrated in the section in Fig. 6. These beams varied in size

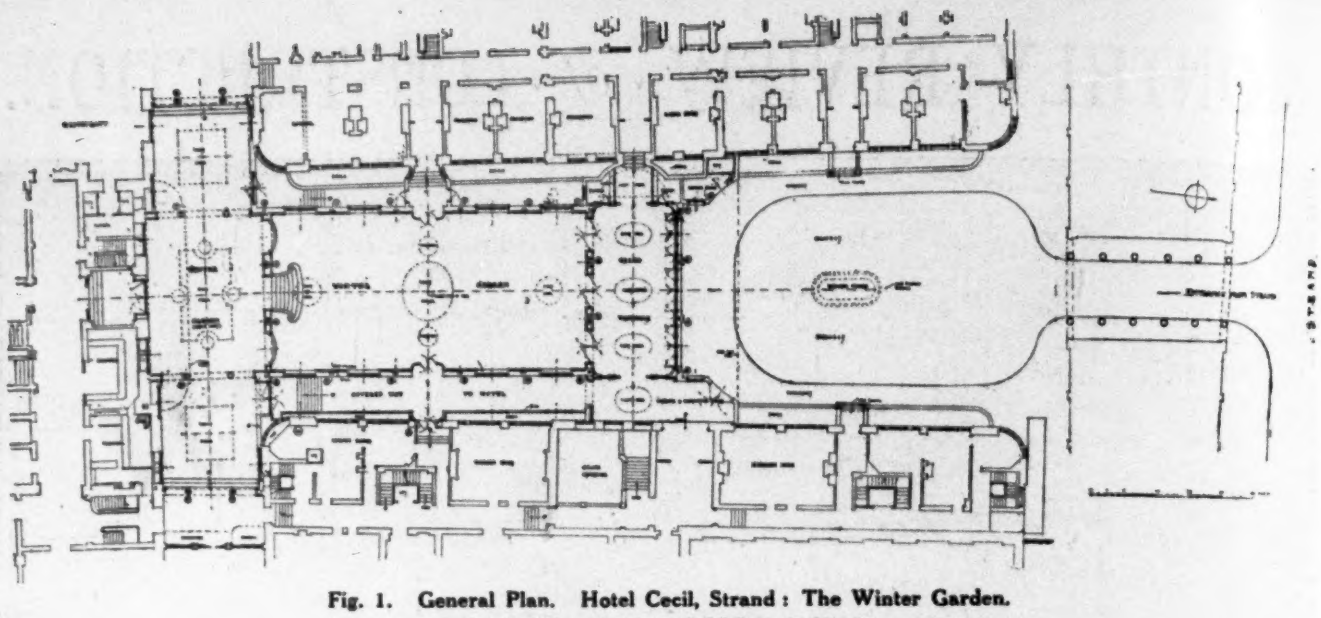


Fig. 1. General Plan. Hotel Cecil, Strand: The Winter Garden.
Mr. E. Keynes Purchase, F.R.I.B.A., Architect.

from 14 in. by 6 in. to 24 in. by 7½ in., and they were connected by web stiffeners in the top layer and bolts and distance pieces in the lower layer. The grillages were kept quite clear of the arches themselves, and no pressure was allowed to come upon the latter. This form of construction is quite unique, although ordinary grillage foundations are quite usual, and it was entirely carried out from above without the slightest interference with the departments below the courtyard.

In the superstructure itself every effort was made to minimise the work on the site and obtain a building which would be as dry as possible and allow the decorative work to be completed without delay, and this was rendered more difficult owing to the fact that the work was executed during the winter months. The external walls to the palm courts are 18 in. thick, and these are formed with five large openings 9 ft. wide, each finished with a semicircular brick arch. In addition to this brickwork a 4-in. concrete slab lining was employed on the inside, and this was kept 2 in back from the wall proper in order to give a cavity, and thus procure a perfectly dry surface in the interior for the application of the fibrous plaster decoration. The slab lining was well tied back to the brickwork, and was arranged to cover the flanges of the stanchions and afford a protection in case of fire, and in addition it gave a flush surface capable of being treated in any desired manner. The main loads were carried by the stanchions, which are spaced generally at 19 ft. centres, these supporting the ends of the main roof girders, which have a span of 46 ft. 6 in., and the walls and stanchions are carried on the grillage beams described above.

The stanchions are of a compound section built up of one 12 in. by 6 in. by 44 lb. R.S.J. and two 12-in. by ½-in. plates, and they have a total height of over 33 ft. The construction of the roof itself was carried out with main girders, secondary steel beams, and hollow Siegwart beams as a filling in the panels, the latter being employed in order to obviate the necessity for centering, which would have impeded the progress of the work, and in addition they were brought to the site quite dry, thus saving time and obviating the moisture that would necessarily be introduced with wet concrete. These Siegwart beams had an average span of 10 ft., and they were carried by the 12-in. by 6-in. R.S.J., forming the secondary beams, their thickness being only 4½ in. They were required to carry an external load of 112 lb. per foot super., and one beam was tested on the site by loading same up to 784 lb. per foot super. before any signs of failure occurred, and then a small shear crack appeared at one end. The main roof girders were built up with two 24-in. by 7½-in. R.S.J. and four 16-in. by ½-in. plates, this giving a total depth of only 26 in., which was an important consideration, as a flush ceiling was required in the palm courts, and a very deep section would have entailed a certain loss of height. Owing to their great length these girders required some care in raising, as the working space was very limited and they weighed over 7 tons each, while no crane was available, as it was considered that the noise of this would have been objectionable to the visitors in the hotel. The lower court is lit by five large flat lights in addition to the windows,

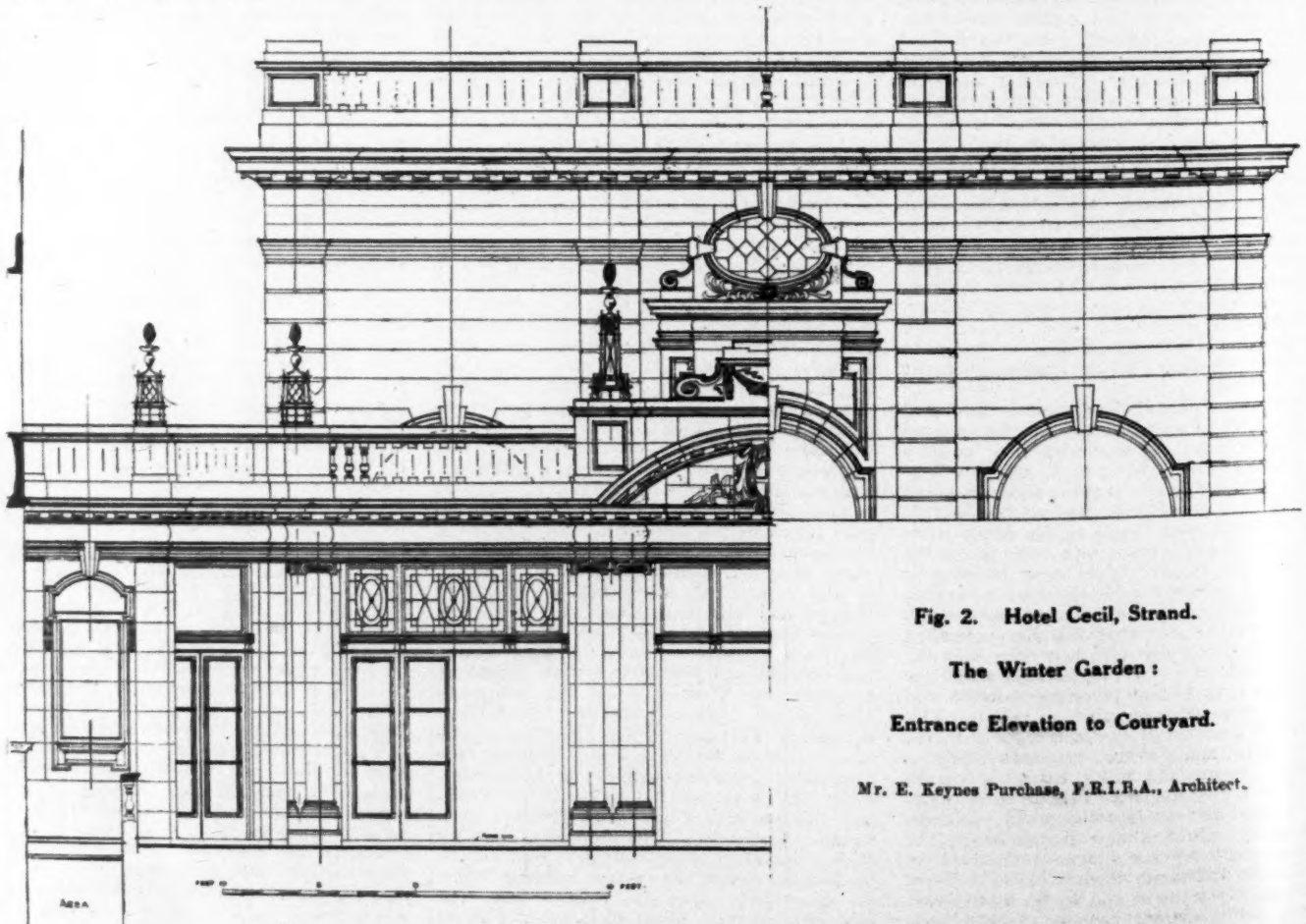


Fig. 2. Hotel Cecil, Strand.

The Winter Garden:

Entrance Elevation to Courtyard.

Mr. E. Keynes Purchase, F.R.I.B.A., Architect.

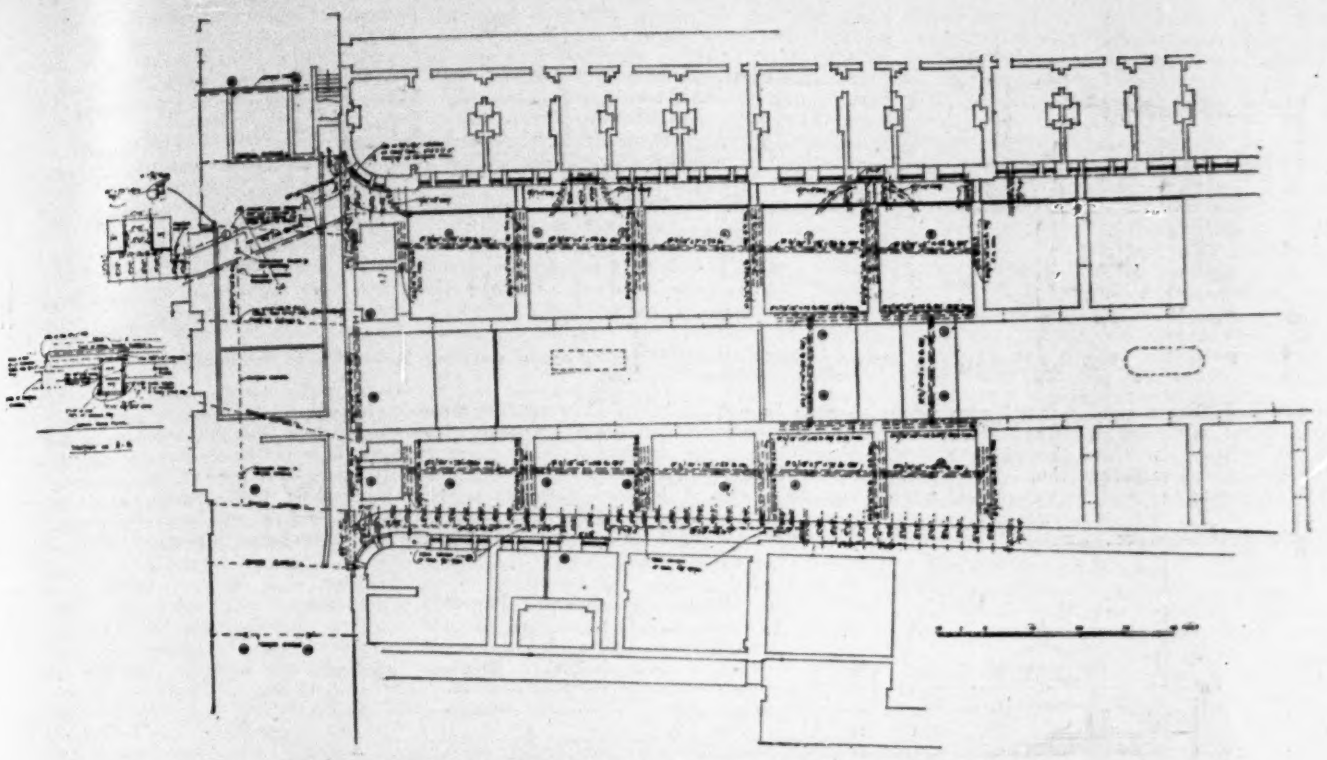


Fig. 4. Hotel Cecil, Strand: Plan of Steelwork in Foundations, etc.

and the upper court has three large flat lights, and the framing was somewhat varied at points to suit these. The roof was finished by screeding with fine concrete laid to falls directly on the Siegwart beams, and upon this the asphalt was laid. The underside and lower flanges of the roof beams were covered with concrete slabs well grouted and fixed to the steelwork, and hangers were provided to carry small tee steels which support the flush suspended ceilings constructed of expanded metal and plaster. The portion of the work adjoining the south block was rendered somewhat difficult owing to the necessity of removing some of the existing work before the new structure could be erected. This existing work consisted of a large glass roof and stone porch, and the front portion of the former was carried by a steel lattice girder 72 ft. long, which extended across the full width of the courtyard and entered the walls of the east and west blocks. It was impossible to remove this in one piece owing to its length, and the ends were cut off with an acetylene cutter before it was lowered. The stone porch was over 60 ft. long and 30 ft. high, and contained several tons of stone, and in addition a large photographic studio was carried on the top of the porch, and this had to be maintained and carried on the new steelwork.

An elaborate system of shoring was adopted which permitted the stonework to be removed and allowed the two main girders to pass right through the studio floor and bear on the main wall of the south block. The two extreme corners of the studio are now carried on compound steel stanchions which pass right through the upper palm court down to the large compound steel girders which originally carried the end stone piers of the porch. The whole of this portion of the work was executed without interfering with the business of the hotel in any way and without the slightest sign of any settlement occurring.

The arrangements for dealing with the luggage are unique, there being no similar example in existence. It will readily be understood that in a building of this magnitude—there being over 900 bedrooms in the hotel—it is absolutely essential to have some method of transporting the luggage from the front entrance to a central point in the hotel where it can be easily distributed to the various rooms, which will combine speed with the minimum amount of labour. Under the old condition of things the luggage was wheeled directly into the two large luggage lifts in the northern portion of the south block, and this was found to work very well, but the introduction of the palm courts had the effect of causing the luggage to be deposited at the new entrance, which is over 150 ft. from these lifts, and the scheme could never have been carried out unless a suitable method of overcoming this trouble had been devised. After much consideration it was decided to introduce a small luggage-room at the entrance, as shown on the plan in Fig. 1, and from this to take a large lift down to a lower level next the east block, whence access was had to an area about 5 ft. wide adjoining the existing building. From this point an electric trolley is worked which travels right up the area and, passing under the floor of the upper palm court, enters the south block at an intermediate level and discharges on to a specially constructed mezzanine floor adjoining the existing luggage lifts. This trolley works in an excellent manner, being on rails with rubber-tyred wheels and worked on an endless cable driven by an electric motor, and capable of being despatched or called from either end of the system, and also of being stopped at any intermediate point, and its capacity is such that the luggage can be disposed of as rapidly as the lifts can deal with same. Of the work in the existing buildings, the most interesting from a constructional point of view was that carried out in the south block in forming the new service-rooms to the restaurant. The erection of the upper palm court necessitated the removal of the old service-rooms, and it was decided to transfer these to three rooms which existed on the east side of the restaurant kitchen, and to provide communication between these new service-rooms and the latter it became necessary to cut a large opening, 10 ft. wide and 9 ft. high, in an existing 18-in. wall adjoining the main staircase. This wall extended to the full height of the south block, some 100 ft. above the ground-floor level, and upon the removal of the marble lining at the point where the new opening was to be cut it was found that a crack occurred in the wall, which was evidently due to some kind of settlement. A large opening occurred on the floor below this point in the American bar, and upon opening up the work at the head of this opening it was found that the girders carrying the enormous load coming down the wall were absolutely insufficient to take any extra weight. The loads were enormous, owing

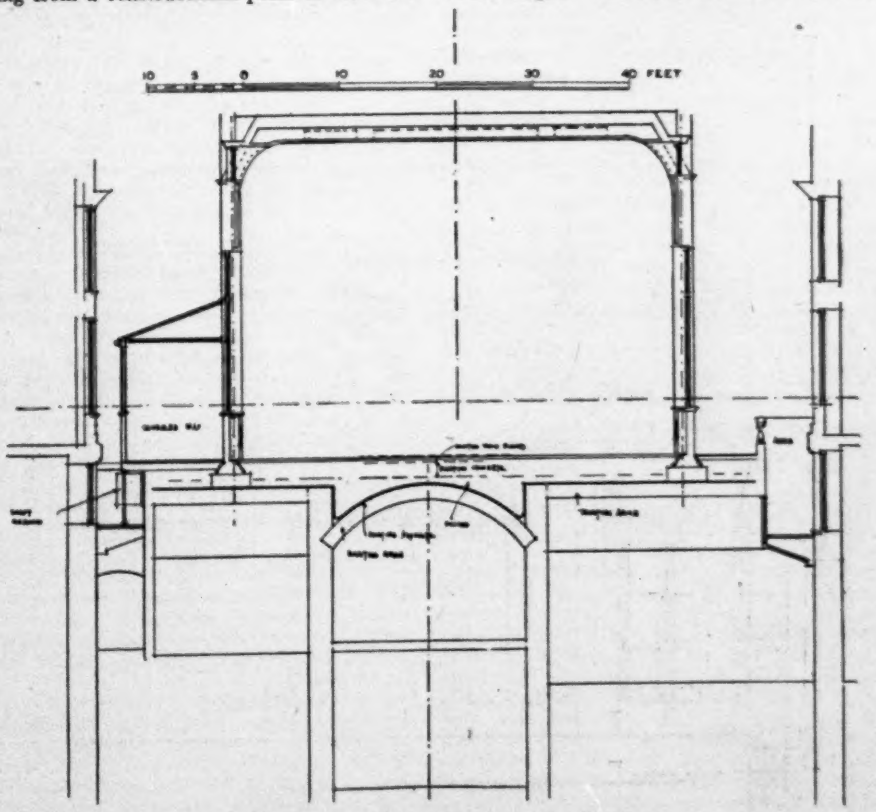


Fig. 5. Hotel Cecil, Strand: Cross-Section.

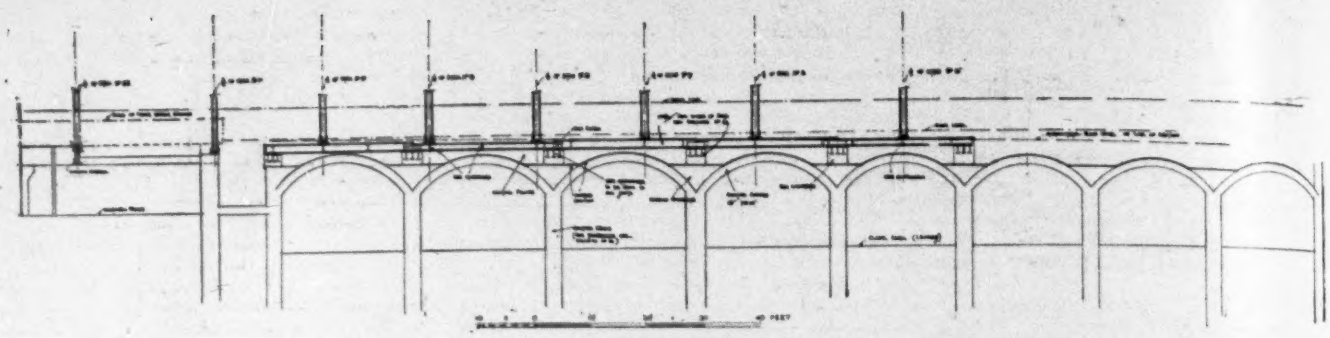


Fig. 6. Hotel Cecil, Strand: Section through Side Arches, showing Steelwork in Foundations.

to the fact that several internal area walls were carried on girders placed at a higher level in the building, and these girders transmitted their loads to the wall in question. The position of the proposed new opening was such that the removal of the brickwork would have the effect of diverting a great amount of extra load had to be obtained even at a great expense. A steel frame was therefore designed to be placed inside the opening in the American bar, consisting of two compound steel girders, each 20 in. deep at the head, resting on a steel compound stanchion at either end, which in turn were supported on two compound steel the old joists were cut off and a stanchion erected on the new frame to receive the load which would come from the steel girders to be placed at the head of the new opening. When the whole of the steelwork was complete the new opening was successfully cut, the whole operation being carried out without any shoring

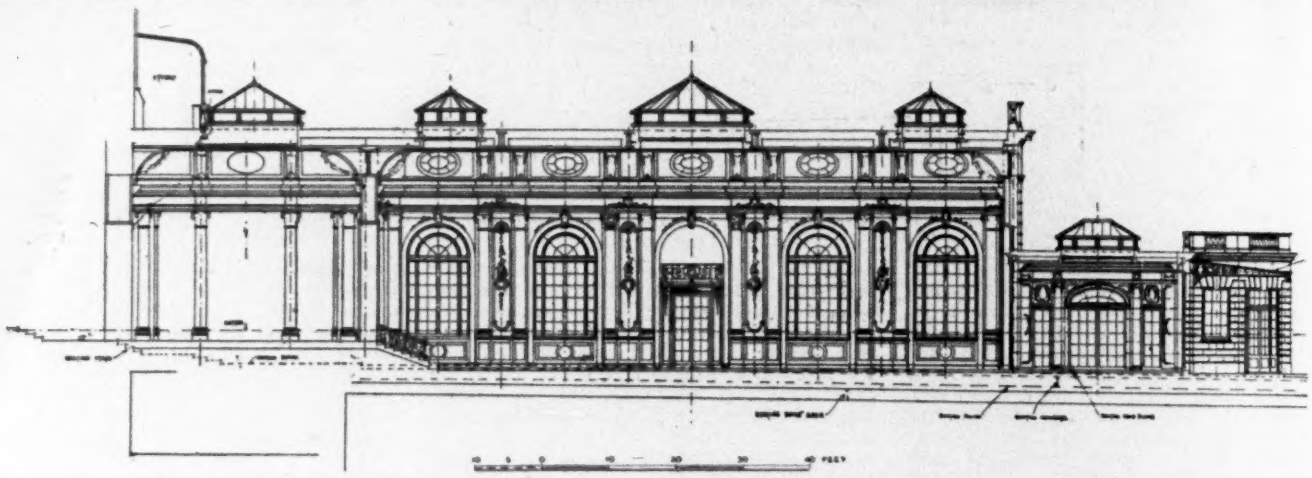


Fig. 7. Hotel Cecil, Strand: Longitudinal Section.

in such manner that it would be brought directly over the head of the opening in the American bar, and consequently it was unsafe to proceed until some method of strengthening the steelwork around the latter was carried out. The new opening between the service-rooms and the kitchen was absolutely essential for the working arrangements of the hotel and girders 2 ft. 9 in. deep designed to distribute the load over the existing brick wall below in such a manner as not to exceed the safe load per square foot. This steel frame was erected in the opening, and steel folding wedges were driven in between the head of the frame and the existing rolled-steel joists to ensure the load being effectually taken, and then the ends of inside the building whatever, and without any settlement occurring. Some careful organisation was required to carry out this work owing to the conditions under which it had to be executed.

The new steelwork required weighed no less than 21 tons, and the whole of this had to be raised about 30 ft. from the Embankment

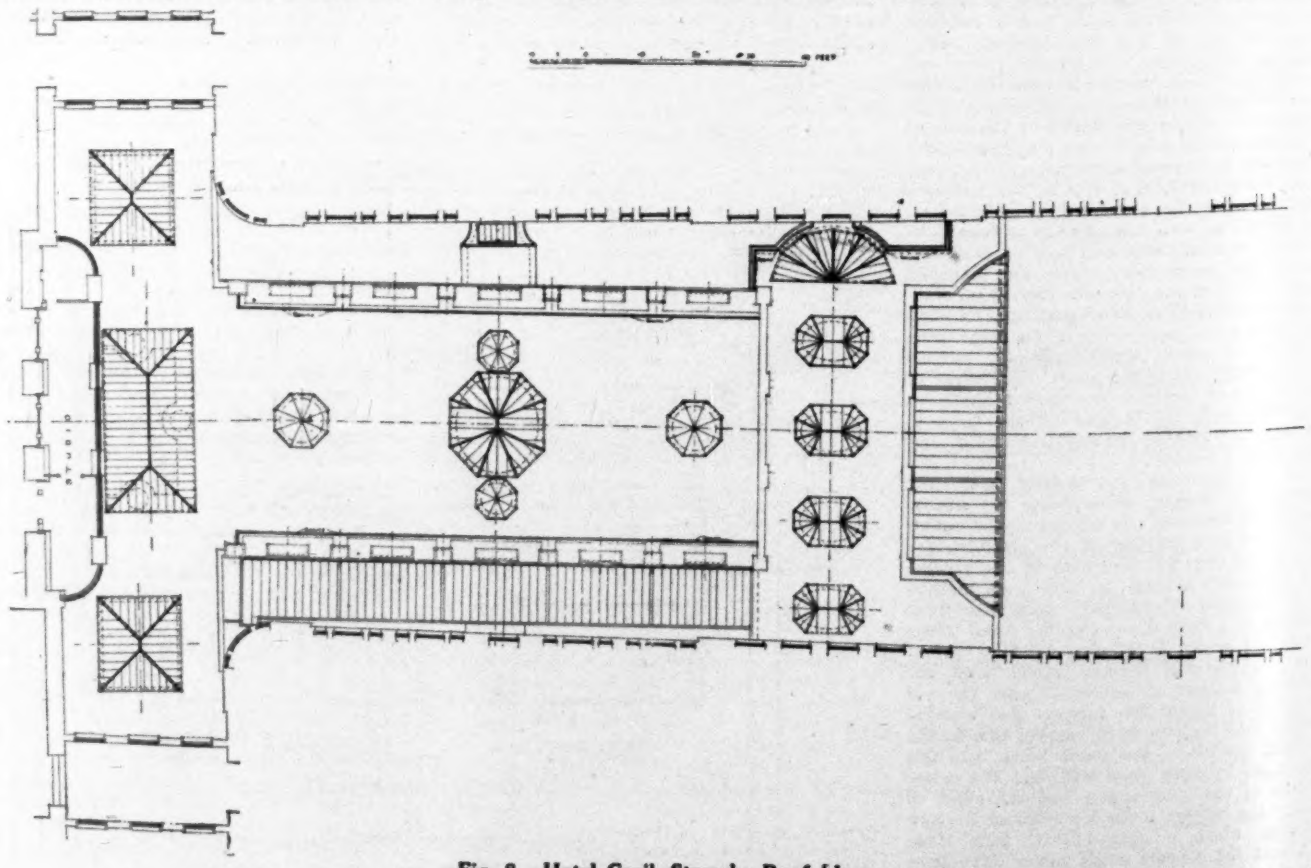


Fig. 8. Hotel Cecil, Strand: Roof Plan.

level and passed through small existing window openings, while the only available working space at the Embankment level was an area about 8 ft. wide, situated between the hotel and the Embankment Gardens, and this was partially occupied by water-tanks, etc. A temporary timber roadway was therefore constructed over the tanks in order to form a passage for the steelwork. This work was quite exceptional on account of the difficulties encountered, and it could not be considered as an everyday constructional problem.

The interior decorations of the palm courts were executed in fibrous plaster, the style adopted being Louis-Quatorze, as will be seen in the photographic views of the finished interiors. Every effort was made to keep the detail bold and in scale with the large rooms, while producing a truly architectural scheme devoid of superfluous ornament and restful in effect. The large window openings are treated with semicircular heads and bold architraves, an enriched key being introduced from which enrichments of flowers and fruit are carried round the upper part of the head, as is typical of the style. The Corinthian Order is employed for the pilasters and columns, the former being introduced on either side of each window opening and supporting the entablature, which is bold in detail and connected to the flat portion of the ceiling by a large cove in which are elliptical lunettes. Panels are formed between the pilasters, and these are enriched with symbolical ornament. The junction of the cove and ceiling is marked by a bold enriched moulding, which is also continued around the openings for the flat lights. These latter are executed in wrought-iron and look extremely effective, while introducing a large amount of interest to the ceiling. The floor is laid with fine Austrian wainscot oak laid in narrow widths, and the stairs between the two courts are constructed of similar material with the exception of the balustrade, which is carried out in wrought-iron. The grand vestibule is treated in a simple manner, the Ionic Order being employed, and the whole of the surfaces being treated and jointed to imitate stone. The floor of this portion and the covered way to the hotel is executed with large squares of dove-grey and white statuary marble which is in harmony with the decoration. Artificial lighting is provided by cornice lights, wall brackets, and electroliers, and these two latter are worthy of notice, being designed in harmony with the decorations and executed in carved wood, while the vestibule is lighted with very fine lanterns executed with metal and glass in the Versailles style. The artificial heating is achieved by radiators placed under the windows, and concealed hot wall panels in certain positions where radiators could not be accommodated; and extract fans are placed in the roof for ventilation purposes, the extraction being through grilles placed in the laylights.

The general contractors for the work were the Building Construction Company, of Cockspur-street, and the steelwork was supplied by Messrs. Drew-Bear, Perks, & Co. The interior fibrous plaster-work was carried out by Messrs. P. Turpin & Co., of Berners-street; the heating and ventilation by Messrs. Richard Crittall & Co., of Wardour-street; the lift and electric trolley by the Medway Safety Lift Company; and the roof work by the Siegwart Fireproof Floor Company.

COAL-GAS AS FUEL.

THE first of two lectures on "Coal-Gas as a Fuel for Domestic Purposes" was delivered by Mr. F. W. Goodenough at the Royal Society of Arts on the 3rd inst.

Mr. Goodenough said that the general use of gas—and purified essence of coal—instead of coal as a fuel would diminish enormously the amount of dark fog from which cities suffered, and, apart from the improvement in health which would result, would decrease the cost of artificial lighting, which on a day of darkness such as was experienced in London a short time ago cost the inhabitants at least £5,000. for gas, as well as a very large sum for electric lighting. In the twenty years 1891-1911 the number of gas-heating, cooking, and hot-water appliances supplied by London and suburban gas companies increased from 46,000 to 1,494,000; in 1912 there was an addition of at least 100,000; and the increase was continuing steadily. The result of this was shown in the period between 1884 and 1910 by a diminution from nearly thirty days of fog in London to only just over five days. No one who had studied the figures as to the relative heat given by gas and electricity at the prices at which they could be supplied on a profit-making basis could regard electricity as being or likely to be in the near future a serious competitor with gas for heating for domestic purposes. Modern gas fires had no hygienic disadvantage; on the contrary, they had a marked superiority over coal fires in that respect. One important point in favour of the modern gas-fire was that it gave warmth mainly in the form of radiant heat. It had also a valuable effect in ventilating a room if the stove were properly fitted. A word of warning was necessary as to the common practice of local gasfitters in placing a gas burner in an ordinary coal grate and piling a heap of clay bricks upon it. In a modern stove the fireclay radiants were made in one length for each Bunsen burner, so that the heat did not come too quickly into contact with cold material. The members of the medical profession in London were becoming enthusiastic supporters of gas-heating, for they recognised its advantages in steadily maintaining the temperature of a sick-room during day and night. The doctors of to-day realised that, as the analytical commission appointed by the *Lancet* twenty years ago reported, gas could be used for warming purposes efficiently, without prejudice to health, provided that certain specified conditions were adhered to. With most of those conditions the modern gas-stove complied.

THE CONCRETE INSTITUTE:
ECONOMY IN REINFORCED CONCRETE DESIGN.

A PAPER on "Economy in Reinforced Concrete Design" was recently read by Mr. John A. Davenport before this Institute. The costs of the various items were calculated for the different sections, percentages, and arrangements, and the results, exhibited in numerous tables, were added together to get the total cost. The general conclusions reached were as follows:—

Reinforced concrete T beams, correctly designed, with the total depth three times the breadth of web, were more economical than any other section for all values of unit cost and loading. For plain beams, reinforced in any way whatever, the most economical ratio of depth to breadth was 3 for all values of unit cost and loading. For singly-reinforced plain beams the most economical reinforcement percentage ran from 1 to 1·2 for all values of unit cost and loading. For doubly-reinforced plain beams the most economical reinforcement percentage was 1, with equal tension and compression steel, for all values of unit cost and loading. Plain beams doubly-reinforced might be more economical than similar beams singly reinforced, the relative economies depending upon the values of unit cost and ratio of depth to breadth of section, but not to any appreciable extent upon the loading.

For ordinary values of unit cost square columns, helically reinforced, were most economical of cost when the diameter of lateral was small, the pitch of lateral 0·2 the breadth of core, and the percentage of longitudinal steel high.

Increased economy of cost would result from the use of longitudinal reinforcement having a lower yield point than ordinary mild steel, provided such material were cheaper than mild steel. The greatest economy of space was obtained by using large diameter, laterals pitched at 0·2 the breadth of core, and a high percentage of longitudinal reinforcement.

A rational arrangement of slabs and beams supported by columns was more economical than slabs supported by beams only. A low percentage slab reinforcement was more economical than a high percentage. A thin slab was more economical than a thick slab.

CONSTRUCTION NOTES.

Filtering Swimming-Bath Water. THE Corporation Baths in the Gorbals district of Glasgow have recently been fitted with plant for aerating and filtering the water in the swimming-bath. The object is to reoxygenate the water by continuous atmospheric contact combined with filtration so as to enable the water to be used for a long time. Water is drawn continuously from one end of the bath and passed through an aerator, afterwards flowing into a filter, and then into a re-heater before return to the bath at the other end. If the experimental plant fulfils expectations, similar apparatus will be installed in all the Corporation baths. It is claimed that the saving effected will very soon cover the initial cost of the plant.

Engineering Work at Lincoln Cathedral. A NEW peal of eight bells is being installed at Lincoln Cathedral. The old wooden framework is being replaced by cast-iron frames resting upon steel joists and stiffened by steel bracing, the whole being carried by three 20-in. by 6-in. H sections. Provision is being made for twelve bells, so that the four smaller ones to complete the peal can be added later. The two largest bells of the old peal, dating back to 1593, are being refitted and rehung on a separate framework as objects of archæological interest and for use as service bells. The work is being carried out by Messrs. John Taylor & Co. A low pressure hot-water heating system is being put in by Messrs. W. Richardson & Co., under the supervision of Sir Charles Nicholson.

The British Fire Prevention Committee's Testing Station. OWING to the greater demands made upon the Committee for testing facilities it has been decided to enlarge their testing station and to add to the Committee's plant. The main building is also being rearranged in such a form that the principal rooms will be available for the Committee's interesting technical and historical collections. It is anticipated that the alterations will be completed early in April, when the testing operations of the new session will be commenced with several tests on fire-resisting doors, various forms of glazing, and some new extinguishers, and certain further tests with concrete floors, etc., and with partitioning materials, will also be carried out. Apart from the usual applications for fire tests emanating from Great Britain and the colonies there is, we are informed, a marked increase of requests for tests from Germany and from the United States, where the Committee's reports enjoy the recognition of the public authorities.

Fallacy of Thermometric Readings for Ventilation. IN a letter to the *Times Engineering Supplement* Dr. Leonard Hill points out a fact which is sometimes overlooked, namely, that a thermometer in an occupied chamber merely indicates the average temperature of its surroundings and does not indicate what the human body feels. Dr. Hill describes a simple instrument devised by him which indicates the rate of heat loss from the body, and may therefore be termed a "comfort-meter." This appliance consists of a metal vessel containing half a litre of water and surrounded by a piece of stockinet, kept moist by means of a lamp wick dipping into a pot of water. A thermometer inserted into the vessel is graduated for 5 deg. above and below body temperature. The water in the vessel is heated by a spirit lamp up to, say, 102 deg. Fahr., and the lamp is then withdrawn. The time is taken when the water has cooled down to 99 deg. Fahr., and again when the temperature has fallen to 97 deg. Fahr. Dr. Hill finds that in a room where the conditions are cool and healthy the interval between the two temperatures is about 2½ minutes, while in a warm, close room the time occupied is much longer and the conditions should be altered until the fall in 2½ minutes is secured. An instrument of this kind should certainly be found useful as a guide to the healthy conditions desirable in meeting-places, schools, and other buildings.

Rebuilding of Southwark Bridge. SOUTHWARK BRIDGE has been finally closed for vehicular traffic, and the work of reconstruction has begun. The first proposal was to improve the gradients of the bridge at a cost of £231,000, but a plan for the reconstruction of the structure at a cost of about £300,000. was finally adopted. Mr. Basil Mott as engineer, and Sir Ernest George as architect, advised the Corporation, and the contract for reconstruction was given to the Sir William Arrol & Co., Ltd., of Victoria-street. The new bridge will be 55 ft. wide, of which 35 ft. will be carriageway and 10 ft. on each side footways. The gradients will be materially lowered to an extent in the centre of the bridge of 6 ft. One effect of this alteration in the gradients will be to open up the basements in Queen-street-place and Southwark Bridge-road.

THE BUILDING TRADE.

THE FINANCE ACT AND THE BUILDING TRADE.

THE well-attended and representative meetings of protest held on March 3 and 4 at York and Hull are significant evidence of the growing concern which the trade very justifiably feels about the administration of the land value duties of the Finance Act, 1910.

There is no doubt that the increment value duty is being charged in a manner and under circumstances never contemplated in the first instance by its authors; and it is manifest that considerable damage is being done to the building trade in consequence. We agree with Mr. John Watson, who referred at the Hull meeting to the Lumsden judgment as the most important feature of the present situation. A consideration of this case (which is reported in 29 *Times Law Reports*, 209) makes it abundantly clear that, if the judge has correctly construed the Act as it stands, the Revenue authorities are able to appropriate as increment duty part of the value which has resulted solely from the industry and expenditure of the builder himself.

This is absolutely contrary to the expressed intention of those who were responsible for the introduction of the land value duties, and in particular to the specific utterances of the Chancellor of the Exchequer.

It is worth while to consider exactly what the Lumsden judgment did decide. Broadly speaking, the question which had to be determined was whether, in spite of the fact that the site value had not increased, there was any fund created on the sale of Mr. Lumsden's property upon which increment duty could be charged. Mr. Justice Horridge held that there was such a fund. The effect of sect. 2 (2) (a) of the Finance Act is, he said, that you can "add to the taxable increment the increase produced by fortuitous sale of the site value at a price greater than what would otherwise be its fall site value." In plain language, this means that increment duty may be charged upon part of the profits of a particular transaction.

This is very unsatisfactory, but it is difficult to say that it is wrong as the Act stands. It bears out what the Revenue Commissioners have contended ever since, in January, 1911, when they issued "Instructions to Valuers." In those instructions they stated that "where the unit of valuation has actually been sold for more than it is worth at the time, increment value duty is collectible." That contention really comes to this, that duty is payable upon the difference between the price the property might have been expected to fetch and the price it actually did fetch. Not only are the Commissioners, as the Solicitor-General himself suggested in the Lumsden case, out to catch windfalls, but they are taking profits which in many cases have nothing whatever to do with any increase in site value.

The whole mischief has arisen under sect. 2 (2) (a) and sect. 25 of the Finance Act, 1910. In the case of a sale, the taxable sum is to be arrived at by taking the purchase price "subject to the like deductions" as are made under sect. 25 in arriving at site value. We will not attempt to deal here with the extremely artificial "values" with which sect. 25 bristles; but in the result something is arrived at which is called, in the case of a sale, "statutory site value on the occasion." This is the sum upon which, as the result of Mr. Justice Horridge's judgment, Mr Lumsden will be called upon to pay duty. Thus there is absurdity as well as injustice in this result, since "statutory site value on the occasion" admittedly contains no element of land value at all. The Government, we understand from a debate in the House of Commons this week, contend that there is, nevertheless, an element of "monopoly value." But it can only be described as a "windfall" into the composition of which the Commissioners do not trouble to inquire.

The Richmond case, which was referred to by Mr. Chambers at the York meeting, was an early instance of the application of the same principle by the Commissioners. Here, again, it was admitted that the site value had not increased since April 30, 1909. But because the price of the house and land, upon what Mr. Justice Horridge calls a "fortuitous sale," was £120 more than the official valuation, the vendors were invited to pay increment duty on that amount. On appeal, however, the Referee reduced it without dealing with the question of principle involved.

It is very difficult to see upon what ground Mr. Justice Horridge's decision in the Lumsden case can be upset. If, as we think will be the case, it is affirmed, it will be the business of the building trade to bring the strongest possible pressure upon the Government with a view of obtaining an immediate amendment of sect. 2 (2) (a) and sect. 25 of the Finance Act, 1910.

In addition to the manifest injustice which we have dealt with, the building trade has good reason to complain of a faulty and unjust administration of the Act in other respects, into which we have no space to enter. We feel that the increment value duty and the reversion duty have, so far as the building trade is concerned, been proved to be in many respects both irritating and mischievous. Excessive complication and a terminology that has surpassed all previous efforts by Parliamentary draughtsmen have produced a situation that calls for the immediate attention of the Government.

At a meeting of the South Wales Federation of Master Builders at the King's Head Hotel, Newport (Mr. R. W. Moon presiding), the question of builders' profits and increment value duty was considered, and a deputation was appointed to wait upon the Chancellor of the Exchequer with the object of pointing out the great difference between the Act as administered and the administration he had promised.

MATTHEW T. SHAW & CO., LTD. *v.* HOLLAND AND NEAL.

WE have received the following letter from Messrs. King, Adams, & Co.:—

SIR,—It is no doubt within your experience that it is common in the trade to take as security bills backed by a stranger to the bill, who adds his name on the back with the intention of making himself liable as an endorser. In this case, Messrs. Matthew T. Shaw & Co., Ltd., gave credit to Messrs. Lindsay, Neal, & Co., Ltd., for about £1,100 worth of goods on bills drawn by themselves on Messrs. Lindsay, Neal, & Co., Ltd., backed in the names of two directors of the company, the shares of which, with the exception of the few qualifying, were held entirely by these two directors. In such a case the failure of the company would create serious difficulties.

Messrs. Matthew T. Shaw & Co., Ltd., called upon Messrs. Holland and Neal, who were the two backers of one of the series of bills for payment, and, having to sue them on this bill, the defence set up was that the endorsements were not regular, as the drawers had not, previously to the endorsers signing their names on the bill, made the bill negotiable by endorsing it themselves. This technical defence was sustained in the action which was brought against them by Messrs. Matthew T. Shaw & Co., Ltd., and has now been confirmed by the Court of Appeal.

As bills endorsed in this manner are constantly passing through business houses, it is well that the trade generally should be warned against taking endorsements made in this way as forming any kind of security for the due honouring of a bill at its maturity.

KING, ADAMS, & CO.

[*** Our correspondents call attention to a matter which is of very considerable importance to the trade. As our correspondents, Messrs. King, Adams, & Co., point out, it is a frequent practice for business houses to accept, as security for credit given, a bill payable to drawer's order, which has been "backed" by a stranger to the bill, although it has not previously been negotiated by the endorsement of the drawer. In the recent case of Shaw & Co., Ltd. *v.* Holland and Neal, the Court of Appeal has decided that such form of security is not enforceable in law.

It is to be observed that this decision has not altered the law in any way. Its importance lies in the fact that it has reiterated the law upon this particular point in terms that are unmistakable; and, in view of the large number of business men who are in the habit of accepting security in this form without questioning its validity, it is very desirable that the significance of this case and of the legal position which it discloses, should be as widely appreciated as possible.

The judge who tried the case, and the Court of Appeal who affirmed his decision, both referred to and approved of an earlier decision which was decided fourteen years ago upon facts which were materially the same as in the present case. In this earlier case (Jenkins & Sons *v.* Coomber; reported in [1898] 2 Queen's Bench 168), Arthur Coomber, the son of Alfred Coomber, the defendant, owed some money to the plaintiffs, and arranged with them that they should draw on him at three months. His father, the defendant, was thereupon to endorse the bill to guarantee payment. This was done, the bill being drawn by the plaintiffs to their own order and handed by them unendorsed to Arthur Coomber. He took it to his father, the defendant, who wrote his name on the back of the bill quite gratuitously, and merely, as he said, "to carry his son a bit further." The bill was then returned to the plaintiffs, and they afterwards endorsed it themselves. The Court decided that the father could not be made liable as endorser of the bill, because it was not complete and regular as a negotiable instrument at the time when he had endorsed it.

In this case, therefore, just as in the recent case, a technical defence was allowed to defeat the original intention of the parties. The original intention of the parties was, of course, that one of them (the defendant) should bind himself by a contract of guarantee to pay a certain sum if called upon. In both cases the effect of the judgments is that an endorsement by A of a bill of exchange drawn by B to his (B's) own order will not operate as a security which the law will enforce unless B has negotiated the bill by placing his name on the back of it *before* A endorsed it.

To the business man it may seem highly illogical that the law, which professes to carry out the intention of parties to a bargain, should fail to do so in these particular circumstances. It was, indeed, argued, both in Shaw & Co. *v.* Holland and Neal and Jenkins & Sons *v.* Coomber, that the signature of the defendant as endorser was sufficient evidence of a contract of guarantee to satisfy the Statute of Frauds and to make him liable as guarantor. But in the case of Steele *v.* M'Kinlay the House of Lords, as long ago as 1880, decided that a mere endorsement on the back of a bill was not enough to support such a contract.

It remains to consider whether there is any similar form of security which does not come within the four corners of the decisions above noted. Apart from an independent contract of guarantee duly evidenced by writing signed by the guarantor, the endorsement of a bearer bill or a bill made payable to the endorser may, of course, safely be taken as security. But a further means of taking a security of this kind, which the law will enforce, is to be found in the facts upon which the case of Glenie *v.* Tucker & Smith was decided in 1908 (reported in 98 *Law Times Reports*, 515). In that case G, who was selling goods to T. took, as security for the price, a blank stamped bill form, across which T, the buyer, had written his acceptance, and at the back of which S (who was willing to guarantee payment of the purchase price) had written his name as endorser. G then filled up the body of the bill, signed it as drawer, and also endorsed it. The Court held that this security could be enforced against S. This decision turned entirely upon sect. 20 of the Bills of Exchange Act, 1882, which relates to blank stamped bill forms. The method adopted by the parties in this case may, to some extent, take the place of the more convenient form of security, which the Courts have declared their inability to enforce.—ED.]

GENERAL BUILDING NEWS.

WESLEYAN CHURCH, PORTSEA.

The new premises which are being erected for the Portsmouth Wesleyan Naval and Garrison Port Mission have been designed by Mr. G. E. Smith, architect, of Southsea. The cost of the work is estimated at £4,500, and the contractor is Mr. W. W. Evans, of Southsea.

NEW CHURCH, NOTTINGHAM.

Messrs. Sutton & Gregory are the architects for the new church of St. Faith's, North

Wilford, which is to be erected at a cost of £6,000. The building will provide accommodation for 650 people, and has been planned with nave, north and south aisles, and transepts, vestries, morning chapel, and baptistry.

NEW INFIRMARY, ARBROATH.

The plans of the proposed new infirmary for Arbroath have received the sanction of the Dean of Guild Court. Mr. Hugh Gavin is the architect.

NEW STORES AT SPRINGWELL.

New premises for the Windy Nook Co-operative Society have been erected at Springwell Colliery. The building is on the main highway and is built of stone from the local quarries. On the second floor is a hall capable of seating 350 persons. The architect is Mr. P. L. Browne, Newcastle, and the builders are Messrs. Miller & Davison, Newcastle.

WORKSHOPS AND SHOWROOMS, STRATFORD.

New workshops and showrooms are being erected in Angel-lane, Stratford, for Messrs. Boardmans, Ltd., under the supervision of Messrs. George Baines & Son. Messrs. E. A. Roome & Co. are the contractors.

DISTRICT RAILWAY-STATION, CHARING CROSS.

In connection with the union of the underground railway systems, a new Charing Cross Station on the Embankment is to be erected on the site of the present building. The main feature of the new station will be a large booking hall surmounted by a dome. The work will be begun in the course of a few weeks, and it is hoped that the new station will be completed early in 1914. The architect, Mr. H. W. Ford, Old Queen-street, Westminster, informs us that alterations to the Temple Station of the District Railway will be made shortly from his designs also.

TRADE NEWS.

Under the direction of Mr. Arthur W. Ward, A.M.Inst.C.E., Borough Engineer, Portsmouth, Boyle's latest patent "air-pump" ventilator has been employed in connection with the ventilation of the Banqueting Hall at the Town Hall.

Carron Company have received the following communication from Colonel Douglas Dawson, Comptroller, Lord Chamberlain's Office, St. James's Palace:—"I am desired by the Lord Chamberlain to inform you that the King has been graciously pleased to grant you a warrant of appointment as 'grate manufacturers to his Majesty.'"

We are informed that Mr. F. Harrison, architect, Accrington, has specified the patent powder Pudlo for rendering cement waterproof for use on the Children's Home which is being erected at St. Anne's-on-Sea.

The Rural District Council of Sedgefield, Durham, has accepted the tender of Mr. J. W. White, of Sunderland, for the construction of the new water reservoir, in accordance with the plans of Messrs. Paul Piketty & Co., reinforced concrete engineers, London, W.C.

The additions to the Union Workhouse, Macclesfield, are being supplied with Shorland's warm-air ventilating patent Manchester grates and ventilators by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

APPLICATIONS UNDER LONDON BUILDING ACTS, 1894 to 1909.

At the last meeting of the London County Council the following applications under the London Building Acts were dealt with. (The names of the applicants are given in parentheses):—

Lines of Frontage and Projections.

Greenwich.—Erection of a house on the southern side of Troughton-road, Greenwich, with its flank abutting upon Rathmore-road, and the erection of four houses on the southern side of Troughton-road, eastward of Rathmore-road (Mr. R. Abbott).—Consent.

Hampstead.—Erection of a projecting porch in front of No. 4, Holly-place, Hampstead (Mr. R. L. Curtis).—Consent.

Holborn.—Erection of Nos. 24, 25, and 26, Great Queen-street, Kingsway (Messrs. Bird & Walters).—Consent.

Kensington, North.—Addition at the rear of No. 115, Cambridge-gardens, Kensington, next to Maxilla-gardens (Mr. O. Murphy).—Consent.

Kensington, South.—Buildings upon the site of Nos 197 to 215, Kensington High-street, Kensington, so as to permit the erection of the buildings 52 ft. in height to the top of the blocking course above the main cornice, and 55 ft. in height to the top of the balustrade (Mr. W. L. Eves).—Consent.

Kensington, North.—Two illuminated signs on the sides of the iron and glass shelter at Ladbroke Hall, Ladbroke-grove, Kensington (Messrs. W. H. Beresford & Co. for Ladbroke Hall, Ltd.).—Refused.

Limehouse.—Erection of a building to abut upon the north-eastern side of Parnham-street and the south-eastern side of Tomlin's-terrace, Limehouse (Mr. H. Riches).—Consent.

Norwood.—Erection of porches and bargeboards to nine houses on the northern side of Cornwall-road, Brixton (Messrs. E. Evans & Sons).—Consent.

St. George, Hanover-square.—Erection of a projecting iron and glass illuminated sign at Grosvenor Court Hotel, Oxford-street and Davies-street (Messrs. Starkie, Gardner, & Co. and the Artificers' Guild, Ltd.).—Consent.

St. George, Hanover-square.—Retention of a projecting iron and glass pent roof over the area at the rear of Nos. 243, 245, 247, and 249, Regent-street, abutting upon Swallow-place (Mr. H. Tanner, jun.).—Consent.

St. Pancras, South.—Buildings upon the site of Nos. 23, 25, 27, 29, and 31, Euston-road, St. Pancras (Messrs. Parr & Sons).—Consent.

Wandsworth.—Erection of buildings on the southern side of Mount Ephraim-lane, Streatham (Messrs. E. I'Anson & Son for Mrs. E. P. Mortimer).—Consent.

Westminster.—Erection of a projecting shop at No. 141, Victoria-street, Westminster (Messrs. Sims & Woods, Ltd.).—Consent.

Woolwich.—Erection of oriel-windows, bargeboards, and half-timber work at "The North Kent Brewery Tap," Lakedale-road, Plumstead (Mr. J. O. Cook for Mr. C. Beasley).—Refused.

Width of Way.

Peckham.—Erection of buildings on the northern side of Atwell-street, Peckham (Mr. A. E. Mullins for Mr. W. Monks).—Consent.

Walworth.—Erection of a building on the southern side of Arnside-street, Walworth (Mr. E. Cannell).—Consent.

Width of Way and Line of Fronts.

Mile End.—Erection of buildings at the rear of Nos. 23 and 24, Tredegar-square, Mile End, next to Tredegar-terrace (Mr. E. J. Harrison for the Guardians of the Hamlet of Mile End Oldtown).—Consent.

Formation of Street.

Lewisham.—Formation or laying out of a street for carriage traffic to lead out of the eastern side of Manor-lane, Lee (Mr. G. A. Lansdown).—Refused.

Cubical Extent.

Battersea.—Erection of a building and silos at the premises of the Morgan Crucible Company, Ford's-lane, Battersea (Morgan Crucible Company, Ltd.).—Consent.

City of London.—For alterations to the northern block of the premises of Messrs. Waterlow Brothers & Layton, Ltd., on the eastern side of Broken Wharf, City, so far as relates to an extension of the top floor of the northern block and to extensions of the central and southern blocks (Messrs. F. Chambers & Son).—Consent.

Marylebone, East.—Alterations and additions at the premises of Messrs. Bourne & Hollingsworth, Nos. 116 to 128, even numbers only, inclusive, Oxford-street, so far as relates to alterations in the basements (Mr. John Slater).—Consent.

Uniting of Buildings.

Bermondsey.—Opening in the party wall between Nos. 146 and 148, Jamaica-road, Bermondsey (Messrs. Crosse, Curtis, & Largen for Mr. G. Emmitt).—Consent.

Bermondsey.—Formation of an opening in a division wall at the premises of Messrs. W. J. Davies & Sons, Ltd., Weston-street, Bermondsey (Messrs. W. J. Davies & Sons, Ltd.).—Consent.

Marylebone, East.—Use of double doors of special construction in lieu of double iron doors to basement staircase openings at Nos. 179, 181, 183, and 185, Great Portland-street, St. Marylebone (Fireproof Doors, Ltd.).—Consent.

Paddington, South.—For the uniting of the Lancaster Gate Tube Railway-station superstructure with No. 11, Stanhope-terrace (Mr. W. R. Phillips).—Consent.

PROJECTED NEW BUILDINGS IN THE PROVINCES.*

ABERDARE.—Hospital, Abernant Park; Mr. O. Williams, Surveyor, Urban District Council Offices, Aberdare.

Alloa.—Alterations to Bellevue House, for Messrs. G. Younger & Son, Ltd., brewers, Alloa. Extensions to bakery, Primrose-street, for the Co-operative Society. Alterations to headquarters; Commanding Officer, Local Territorials.

Alnwick.—Cottage homes; Mr. H. W. Walton, Guardians' Offices, Alnwick.

Annfield Plain.—Sixty houses; Mr. T. J. Trowsdale, Surveyor, Urban District Council Offices, Annfield Plain.

Balla (Ireland).—Erection of St. Patrick's Church; Mr. J. Wynne, builder, Lower Seatown, Dundalk.

Barking.—Twenty-six houses, Boundary-road (5,442*l.*); Mr. E. H. Glenny, builder, care of the Clerk, Urban District Council Offices, Barking.

Basingstoke. — Extensions to offices for Messrs. J. L. Thornycroft & Co., Ltd., motor van and waggon builders, Worting-street, Basingstoke.

Bentley.—Sewage pumping-station; Surveyor, Urban District Council Offices, Bentley.

Bingley.—Additions to Cottingley Mill for Woolcombers, Ltd., 11, Forster-square, Bradford.

Birmingham.—School, Willow-avenue, Rotton Park (10,580*l.*); Mr. J. A. Palmer, Education Offices, Edmund-street, Birmingham. Buildings at Lighting Depôt, Cambridge-street; Mr. H. E. Stilgoe, Surveyor, Town Hall, Birmingham. Stables at destructor works, Nechells (1,711*l.*); Mr. J. E. Harper, builder, Lombard-street, Birmingham. Stabling and house, etc., at Lifford Destructor Works (3,658*l.*); Messrs. T. Elvin & Sons, builders, Naden Works, Sohohill, Birmingham.

Bishop Auckland.—Alterations to old infirmary; Mr. S. Adams, Guardians' Offices, Bishop Auckland.

Blackburn.—Riding school, The Wrangling, for the East Lancs Territorial Force Association; Colonel R. C. Winder, V.D., Secretary, National Buildings, St Mary's Parsonage, Deansgate, Manchester. Hall, adjoining St. Michael's Church, Whalley New-road (450 places); Messrs. Sames & Green, architects, 14, Richmond-terrace, Blackburn.

Blackheath (near Birmingham).—Proposed alterations to Blackheath Church Schools (700*l.*), for the Managers.

Blackpool.—Proposed church, Central-road; Trustees, Primitive Methodist Church, Lunegrove, Blackpool.

Bolton.—Baths, Moss-street; Mr. E. Ll. Morgan, Surveyor, Town Hall, Bolton.

Bridge of Allan.—Alterations to Westerton House for Mr. Edmund Pullar, Coney-hill House, Bridge of Allan.

Cadishead.—Extensions to school; Mr. H. Littler, architect, 16, Ribblesdale-place, Preston.

Catshill (Worcestershire).—School (5,295*l.*); Messrs. J. Harper & Sons, builders, Beeches-road, Blackheath, Birmingham.

Chester-le-Street. — Proposed drill hall for the Durham County Territorial Association.

Claremont (Alloa).—Alterations to mansion; Messrs. John Melvin & Son, Mar-street, Alloa.

Cleethorpes. — Shelter and convenience (364*l.*); Mr. G. W. Brown, builder, care of the Clerk, Urban District Council Offices, Cleethorpes.

Coventry.—School, Folly-lane (1,200 places), and enlargement of school, Little Heath (400 extra places); Mr. F. Horner, Education Offices, Coventry.

Croydon.—Additions at workhouse (1,220*l.*); Messrs. W. Smith & Sons, builders, London-road, Croydon.

Cwmnantygynt.—School for the Abercarn, Risca, and Rogerstone School Managers.

Dartford.—Plans have been passed for the erection of motor shops in Priory Orchard for Messrs. J. & E. Hall, Ltd.

Darwen.—School, Spring Bank (8,600*l.*); Messrs. R. Shorrock & Son, builders, Union-street, Darwen.

Deiniolen (Carn).—Proposed school; Mr. E. R. Davies, County Education Offices, Carnarvon.

Denbigh.—Market buildings (10,000*l.*); Mr. J. Davies, Surveyor, Town Hall, Denbigh.

Derby.—School, Nightingale-road; Mr. W. Cooper, Education Offices, Derby.

Dewsbury.—Extensions to Dewsbury Club and Institute, for the Secretary.

Dipton.—Picture theatre for the Empire Picture Company.

Dudley.—The following plans have been passed:—Additions to works, Brown-street, Kate's-hill, for Messrs. Appleton & Co., Ltd.; electric theatre, High-street, Netherton, for Mr. T. Jackson; ten houses, Lantern-row, Netherton, for Mr. T. Price; alterations to Saracen's Head Hotel, Stone-street, for Messrs. J. Hanson & Sons, Ltd.; warehouse, Wellington-road, for Messrs. Raybould & Whitehouse; warehouse, New Mill-street, for Messrs. Grainger & Smith, Ltd.

Dundee.—Alterations to premises, Nethergate and Union-street, for the British Linen Bank, head office, St. Andrew-square, Edinburgh; additions to works, Milne's East Wynd, for Messrs. Bruce & Storrock, brattice cloth manufacturers.

* See also our list of Competitions, Contracts, etc., on another page.

Dysart.—School, Blairhill, for the Kirkcaldy and Dysart School Board.

Eastbourne. — Additions at Sanatorium (878*l.*); Mr. F. W. Allcock, builder, Eastbourne. Plans have been passed as follows:—Addition to garage, Seaside, for Messrs. Caffyns, Ltd.; Mr. J. W. Woolnough, architect. Four houses, Desmond-road, for Mr. William Hookham, builder. Addition to "Kingsbridge," Grange-road, for Mr. A. B. Crispin; Mr. F. G. Cooke, architect. Garage, Willingdon-road, for Mr. Andrew Ford, architect. Garage, The Goffs, for Major Cooke; Messrs. Thurgood & Martin, architects. Addition to premises, Star-road, for Messrs. H. Bradford & Son; Messrs. Bainbridge & Son, builders. Four houses, Victoria-drive, for Mr. J. Izzard, builder. Plans have been lodged for four houses, Channel View-road, for Mr. A. Wilcockson; Mr. A. Ford, architect.

Eccles.—Plans have been passed for thirteen houses, Higher Croft, Barton, for Mr. J. E. Owen.

Edinburgh.—Rifle-range, Colinton-road, for the Merchiston Castle School, Ltd.

Egerton (near Bolton).—Club and swimming-bath (2,000*l.*); Secretary, Egerton Lads' Club; Messrs. Ormrod & Pomeroy, architects, Mawdsley-street, Bolton.

Ellesmere Port.—Theatre (2,600*l.*) Mr. H. P. Beckett, architect, Bank-chambers, Ellesmere Port.

Epsom. — School chapel, Ashley-road; Trustees, Wesleyan Chapel, Epsom.

Exminster.—Erection of Devon and Exeter Industrial School (780*l.*); Messrs. N. Pratt & Sons, builders, Clyst St. Mary, Exeter.

Felixstowe. — Completion of St. John's Church; Rev. A. E. Stantial, St. John's Vicarage, Felixstowe.

Fleetwood. — Proposed church; Trustees, Wesleyan Mission Church, Elm-street, Fleetwood. Additions to premises, Darbishire-road, for the Co-operative Society.

Girvan.—Houses, Watermouth Park; Mr. C Kenmure, Ellerslie, Barnton, Midlothian.

Gnosall.—School; Mr. J. Hutchings, Architect, County Education Offices, Stafford.

Golcar.—Proposed church; Trustees, St. Michael's Mission Church.

Goole.—Workshops at gasworks; Mr. J. Fazakerly, Gas Engineer, Urban District Council Offices, Goole.

Gourock.—Two blocks of houses, Caledonia-road, for the Scottish Garden Suburb Company, Ltd.

Greenock.—Clubhouse (about 3,000*l.*), for the Greenock Golf Club.

Harrogate.—Parochial hall (2,500*l.*); Mr. A. A. Gibson, architect, 5, Prospect-crescent, Harrogate. House and tearooms on the Moor; Mr. C. E. Rivers, Engineer, Town Hall, Harrogate.

Hindpool.—School (7,190*l.*); Messrs. W. Gradwell & Co., builders, Hindpool-road, Barrow, Lancs.

Holmes Chapel.—Proposed school; Mr. H. Beswick, County Architect, Newgate-street, Chester.

Holyhead. — Alterations to Tabernacle Church (3,000*l.*); Mr. R. Jones, builder, Lanwnda, Carnarvon.

Hook (Pembroke). — School buildings, Llangwm (985*l.*); Messrs. Thomas & Watts, builders, Leechpool, Haverfordwest.

Horfield.—Baths, Gloucester-road; Mr. L. S. Mackenzie, Engineer, City Hall, Bristol.

Huddersfield.—Enlargement of schools, Crosland Moor, Moldgreen, and Paddock; Mr. O. Bamforth, Education Offices, Huddersfield.

Hylton (near Sunderland).—Works for the British Chain Manufacturing Company, Ltd., Union-street, South Hylton.

Ipswich.—Housing scheme, Garden Suburb; Mr. E. Buckan, Surveyor, Town Hall, Ipswich.

Kendal.—The following plans have been passed:—Alterations and additions to London City and Midland Bank, Highgate; Mr. T. B. Whinney, architect. Six workmen's cottages, Lound-square, for Mr. J. P. Tanner. Six houses, Parr-street, for Mr. J. W. Howie, builder. Twenty-four houses, Two Stiles Field, Kendal Green, for Mr. R. Dixon, builder. Conversion of warehouse into kinema hall, Sandes-avenue, for Mr. R. Duncan French; Messrs. Nagington & Shennan, architects, Liverpool.

Kettering.—Factory, Field and Cobden streets, for the Kettering Clothing Manufacturing Co-operative Society, Dryden-street.

Killamarsh (near Chesterfield).—Enlargement of Parish Church (500*l.*), for the Vicar.

Kirkham (Lancs).—Cottage homes (8,416*l.*); Mr. F. Harrison, architect, 30, Willow-street, Accrington; Messrs. T. Croft & Sons, Ltd., builders, Victoria-street, Preston.

Leigh (Lancs).—Weaving shed for the Leigh Manufacturing Company, Ltd., cotton goods manufacturers, 266a, Chapel-street, Leigh.

Lindley.—Workmen's dwellings; Mr. K. F. Campbell, Engineer, Town Hall, Huddersfield.

Little Oakley.—Proposed housing scheme (2,000*l.*); Mr. F. G. V. Brown, Surveyor, Rural District Council Offices, Tendring.

Liverpool.—Reconstruction of police-station, Prescot-street (10,000*l.*); Mr. J. T. Alexander, Building Surveyor, City Hall, Liverpool. Manse, etc., for the Trustees, Primitive Methodist Chapel, Prince's-avenue, Liverpool.

Liversedge. — Club premises, for the Trustees, Millbridge Working Men's Club.

Macclesfield.—Cinema, Buxton-road; Messrs. G. Roylance & Co., Ltd., Water's Green, Macclesfield.

Mansfield.—Extensions at Forest Hospital; Mr. T. P. Collinge, Surveyor, Town Hall, Mansfield.

Merthyr.—Library and municipal offices, site of Old St. David's School; Mr. E. A. Johnson, architect, 18, Glebeland-street, Merthyr.

Nelson.—Housing scheme; Mr. W. Shackleton, Town Hall.

Newcastle-on-Tyne. — Conversion of Old Victoria Music Hall into picture hall and *café*; Messrs. White & Stephenson, architects, 59, Grey-street, Newcastle.

Newton Abbot.—Alterations and additions at Railway Hotel for the proprietors.

Northampton.—Plans have been passed as follows:—Alterations to premises, Dychurch-lane, for Mr. A. Kingham; six houses, Adnitt, Allen, and Holly roads, and Abington-grove, for Mr. A. P. Hawtin; alterations to premises, Kettering-road, for Mr. H. G. Saunderson; two houses, Balmoral and King Edward roads, for Mr. W. Heap; alterations to premises, Bearward-street, for Messrs. W. J. Timms & Co

Nottingham.—Proposed rebuilding works for Messrs. J. Sutton & Sons, lace manufacturers.

Openshaw.—Proposed extensions to premises, Ashton Old-road, for Messrs. Armstrong, Whitworth, & Co., Ltd., steel manufacturers.

Oundle.—Alterations to Latham's Hospital, for the Governors.

Overton.—Buildings at Court Farm for Sir W. Portal.

Paisley.—Additions and alterations to works, Abercorn-street, for Messrs. W. Polson & Co., Ltd., cornflour manufacturers.

Plymouth. — Proposed tuberculosis dispensary; Mr. J. Paton, Surveyor, Town Hall, Plymouth.

Port Glasgow.—Buildings at dockyard for Messrs. Russell & Co., shipbuilders, Kingston-yard, Port Glasgow.

Portrush.—Baths; Messrs. T. W. Henry, Ocean Buildings, Donegall-square East, Belfast, and A. J. Clarke, Town Hall, Portrush, joint architects.

Port Talbot.—Alterations to premises, Courtland-terrace, for Messrs. Guttridge (690*l.*); Mr. T. B. Smith, architect, St. Oswald's-chambers, Port Talbot; Messrs. Anderson & Vaughan, builders, Albion Works, Aberavon.

Preston.—Proposed rebuilding of Bank Top Mill, Salmon-street, for Messrs. William Paley, Ltd., cotton spinners.

Radcliffe. — Thirty-two houses, Radcliffe Hall and Stand-lane sites; Mr. William L. Rothwell, Engineer, Urban District Council Offices, Radcliffe. Additions to brewery, Seed-street, for Messrs. Richard Seed & Co., Ltd., brewers.

Ramsbottom.—Mill for Messrs. P. E. Holden & Sons.

Rawtenstall.—Additions to public library; Mr. J. Johnson, Engineer, Town Hall, Rawtenstall.

Richmond (Yorks).—Eight houses, West Field; Mr. H. W. Marsden, Surveyor, Town Hall, Richmond.

Rishton.—Fifteen houses, Eachill-road; Mr. J. Cornall, Surveyor, Urban District Council Offices, Rishton.

Ruthin.—Infirmary (4,500*l.*); Mr. T. A. Roberts, architect, Mold.

Saffron Walden.—Houses; Mr. H. Jones, Engineer, Great East Railway Company, Liverpool-street Station, E.C.

Salford.—Plans have been passed for alterations and additions to works, Hampson-street; works, Adelphi, and printing works, Chapel-street, for the proprietors; also for additions and alterations to chapel, Great George-street, for the Trustees.

Seaham Harbour.—Houses; Mr. J. Burrell, Surveyor, Urban District Council Offices, Seaham Harbour.

Sedgley.—Additions to premises, Jew's-lane; Mr. William F. Taylor, J.P., agent, Earl of Dudley's Estate, Downing-street, Dudley.

Sheerness.—Alterations and additions to workhouse infirmary (780*l.*); Messrs. Milton Brothers, builders, Gravesend.

Skipton.—Proposed picture palace, Kilngarth, for the Premier Picture Palace Company, Ltd.

Sligo.—Housing scheme; Surveyor, Rural District Council Offices, Sligo.

Southampton. — Workmen's houses, Otterbourne (2,270*l.*); Mr. E. C. Rodda, Waterworks Engineer, Town Hall, Southampton. Plans have been passed for four houses, Ampthill-road, for Messrs. Weston & Burnett, and for additions to premises, Above Bar-street, for Mr. A. F. Gutteridge. Mr. J. Nichol has lodged plans for the erection of seven houses in Chilworth-road.

Southend. — Hall, West-road, for the Southend Town Mission.

Stafford. — Additions to library (702*l.*); Messrs. F. Epsley & Sons, builders, care of the Clerk, Town Hall, Stafford.

Stevenage.—Proposed restoration of Parish Church (1,000*l.*), for the Vicar.

Surbiton.—Domestic subjects centre, Ramsay Nares, County Education Offices, Kingston.

Swansea.—Proposed alterations to station, High-street; Mr. A. E. Bolon, Secretary, Great Western Railway Company, Paddington-station, W. The following plans have been passed:—Erection of premises, Sway-road, Morriston, for Messrs. Hopkins, Samuels, & Co.; three houses, Millwood-street, for Mr. T. Richards; four houses, Eaton-grove, for Mr. B. Lewis; premises, Castle-street, for Messrs. Griffiths & Son; alterations and additions, Alexandra Laundry, De-la-beche-street, for Mr. T. Benson.

Tenbury.—Additions to infirmary (300*l.*); Messrs. Pritchard & Pritchard, architects, Bank Buildings, Kidderminster.

Tideswell.—Enlargement, etc., of Wesleyan Chapel and Schools (about 600*l.*), for the Trustees.

Trimdon Grange.—Additions to St. Anne's Church, for the Vicar.

Tyseley (Birmingham).—Additions to factory for Messrs. Perry & Co., Ltd., motor-car manufacturers.

Urmston.—Alterations to school (350*l.*); Mr. H. Littler, architect, 16, Ribblesdale-place, Preston.

Usworth.—Housing scheme; Mr. J. H. Mole, Surveyor, Rural District Council Offices, Chester-le-Street.

Wadsley.—Church (2,200*l.*), for the Wadsley Bridge United Methodist Trustees.

Wallingford.—Proposed housing scheme; Mr. William Honeybone, Surveyor, Town Hall, Wallingford.

Wallsend. — Proposed cleansing-station, etc.; Mr. M. W. Graham, Education Offices, Wallsend.

Warrington.—Plans have been passed for the erection of seven shops and houses for Mr. T. Williams; also for rebuilding mill, Bank Quay, for Messrs. James Fairclough & Sons, Ltd.

Waterfoot.—Picture hall, Booth-street, for Messrs. E. & G. Lockwood.

Wednesbury.—Institute (13,468*l.*); Messrs. H. Gough & Sons, builders, 530, Dudley-road, Wolverhampton.

Wigan.—Proposed Sunday-school; Trustees, Bryn Baptist Chapel.

Withnell. — Pump-house; Mr. R. Brown, builder, Brinscall, Withnell.

Worksop.—Pavilion for the Worksop Cricket Club.

Weymouth.—Housing scheme, etc., Westham; Mr. Frank Roberts, Surveyor, Town Hall, Weymouth.

York.—Lodge at hospital, Huntington-road (438*l.*); Messrs. H. E. Turner & Son, builders, Lawrence-street, York.

BUILDING TRADE WAGES.

As the result of the efforts of the London District Committee of the Amalgamated Society of Carpenters and Joiners 20,000 men have received an increase of wages at the rate of one halfpenny per hour. The hours at present worked by the men are fifty per week in summer and forty-four in winter (seventeen weeks), the rate of pay being 11½d. per hour.

Chester painters will receive 2s. more and work five hours less a week as a result of the settlement of their five weeks' strike. Work has been resumed on the following terms:—8¾d. an hour and 9d. for painters and charge hands respectively; forty-nine and a half hours to be a working week in summer and forty-four in winter; overtime at the rate of time and a half, and 5s. instead of 4s. allowance per week for lodging. The first strike of plumbers in Huddersfield lasted for three weeks and ended with a promise that wages will be raised ½d. an hour on July 1. The carpenters and joiners in the same town are to receive ½d. an hour more from this week.

The workers in the building trades at Stroud have given joint notice to their employers for an advance of 2d. per hour and a code of local working rules, the notices to expire on May 1. The present rate of wages is 6d. per hour for mechanics and 4d. per hour for labourers.

SOME ARCHITECTURAL PROBLEMS.*

THE history of architecture is largely a history of the overcoming of difficulties, the solving of problems. If the study of architectural history is approached with this thought in mind it is seen more clearly as a gradual development, and the study is made at once more interesting, more vital, and more useful.

The primary problem in architecture is the covering of a space. The Egyptians solved it with massive column and beam of stone, though, as seen at Abydos, the struggle with the arch had already commenced. The Assyrian, too, used the vault, while the Persian, by using wooden roofs, was able to use more slender columns and to space them further apart than could the Egyptian. In the early Greek period attempts were made to cover a space with small stones by means of a kind of dome, but in the great buildings of the best period of Greek architecture the arch form was entirely abandoned, and the problem which the Greeks solved was that of giving to the simplest form of construction—that of the column and lintel—perfection of proportion and of expression of purpose.

The Romans, needing great buildings with large areas of uninterrupted floor space, worked on the arch of the Etruscan builders and evolved the great dome of the Pantheon and the massive groined vault of the Basilica of Constantine. It may be of some little interest to note in passing Professor Van Buren's theory, given in an article in the "Journal of Roman Studies" ("A Determining Factor in the Development of Roman Architecture," pp. 196-8, Vol. I.), to the effect that in the early buildings of the Romans the development of the timber truss enabled them to span great spaces, and that the increasing cost of timber and a growing desire for more permanent buildings obliged them to choose between abandoning the spacious interiors to which they had become accustomed, and devising some more permanent method of obtaining them.

The column had been used constructionally as a support for lintels by Egyptian, Persian, Greek, and Roman, but the latter used it principally as a decorative treatment for his constructions of pier and arch or pier and vault type, as, for example, on the exterior of the Colosseum and in the interior of the great halls of their baths. In the former case the entablature became a kind of string-course, the lintel no longer supporting anything, and in the latter it became a decoratively treated block placed between the capital and the vault.

Toward the end of the Roman period the column was used in a new way, as a direct support for the arch. This idea, the introduction of which was of the utmost importance in the history of architecture, was developed by the Byzantine and Early Christian builders. The former of these, however, deserve our attention principally because, developing the use of the pendentive, they gave to the world Santa Sophia, now unfortunately in danger. The Early Christian builder had been content to put up timber roofs, but once more the desire for a more permanent type of building arose, and the Romanesque builders, developing the timber-roofed basilican church on fire-resisting lines, started that wonderful struggle which led ultimately to the glories of Gothic architecture. How interesting the study of Romanesque architecture becomes when one thinks a little less about detail and a little more about construction!

Barrel Vaults.

The Romans had built a barrel-vaulted hall at Nimes, supported by a barrel-vaulted passage at each side, and a number of early Romanesque churches in the South of France were constructed with barrel-vaulted naves supported by half-barrel vaults over the aisles. Then arose various devices which were adopted to get over the difficulties encountered in building groined vaults with semicircular arches—the domical type of vault with all its ribs semicircular, the awkward types of vault with stilted arches and twisted groins, or segmental diagonal ribs and twisted in-filling, caused by the attempt to get a level top on an oblong plan, the curious sexpartite vault as used at the Abbaye aux Hommes, Caen; the still more curious form used at the Abbaye aux Dames, Caen, in which a vertical wall is carried on the intermediate transverse rib, and the unique method tried at Tournus, consisting of arches built across the nave supporting tunnel vaults running at right angles to the length of the church.

And then the solving of these difficulties by the use of the pointed arch! What did architects think of this in the early days? Was it considered an ugly, unarchitectural device which should only be used where it could not be avoided? Did they think of it as many of us are inclined to think of ferro-concrete? I think this must have been so, for I believe there are instances in which the semicircular form continued to be used for other features, while the pointed arch was used in the vault.

Having obtained the simple quadripartite vault such as that used in our Early English buildings, the English designers then began to elaborate it, and so we got the tierceron, which had its use as an intermediate support for the in-filling, then the decorative lierne vault, and finally the wonders of fan and pendant vaulting. But these elaborations were not improvements; the simple Early English type, in which every feature is fulfilling some useful purpose, seems so eminently satisfactory. And then think for a moment of the constructional problems involved in supporting these vaults, from the half-barrel vaults over the aisles, which supported the early barrel vault over the nave, to the great systems of flying buttresses of the French cathedrals.

How full of interest is this story of early experimental struggles, collapses followed by renewed efforts, until finally success is achieved! After success, the elaborations to which reference has been made,

> "And till, long having played its part,
> The curtain fell on Gothic art,"

as Thomas Hardy sings in his latest, though one hopes by no means his last, poem.

Side by side with this great problem of covering a space the equally important one of lighting the interior was being developed, an interesting example in the early stages of the process being the pierced stone gratings, which gave what little light was desired in the mysterious interiors of Egyptian temples, and which in their general arrangement remind one forcibly of the clerestory of much later times. And one may well pause here to note the skilful manner in which the capitals of the columns were arranged with reference to these gratings, those of bud form being used in the aisles below, and those of the bell type in the higher central space, receiving light on their underside.

The question of the method adopted in order to light the interiors of the Greek temples is a very debatable one, but one may be sure that whatever degree of light was needed in such a building as the Parthenon, that amount was obtained. The method of lighting adopted in the Pantheon is particularly noteworthy, the single light in the top of the dome fitting in so well with the idea of unity which is inseparable from this interior.

Mediæval Church Construction.

With the barrel vault of the early Romanesque times it was difficult to get adequate light in the nave. Here and there a barrel vault was perched dangerously above a clearstory, but most of these attempts must have resulted in collapse. An example remains, however, at St. Etienne, Nevers. The use of groined vaulting, as had been discovered long before in the great halls of Rome, allowed of adequate lighting; and the combination of the clerestory in the vaulting and the dark shadow at the back of the triforium delights our eyes in many a mediæval interior. I do not like to leave this subject of lighting without a reference to the austere beauty of the simple Early English lancet window, one of the features of that style which satisfies in the way that Greek architecture satisfies.

Leaving these two great problems, on either of which several papers might well be written, I should now like to draw your attention to one or two minor ones. The first of these, a branch of the great problem of covering a space, is that of forming the junction of a tower with its spire, and I shall deal with this as a matter of disposition of form rather than from the point of view of construction. The spire of Barnack Church is one of our earliest examples, having been probably built before the XIIIth century. Here a square tower of Saxon date supports an octagonal drum, which in turn supports a blunt octagonal spire. We see here the difficulty which has to be dealt with, that of forming a suitable transition from the square to the octagon. In this case a sloping surface is run up from the square tower to the octagonal drum, forming something in the nature of broaches, and the transition is further helped by means of pinnacles.

During the Lancet period a stone spire was occasionally built on the lines of a timber form, the spire at Worth showing the shape of this, but the broach form was the more usual, and this simple device, when made of reasonable slope, was the most pleasing form of all. In some examples, such as Wittering, the broaches are too stumpy to be satisfactory. In some cases—but there are not many of them in England—pinnacles were used instead of broaches, as at Oxford Cathedral, and in other cases the pinnacle is combined with a broach, as at Brixworth, but neither of these forms is so satisfactory as the simple broach. Were the octagonal drum removed at Barnack, and the spire started at the top of the tower, the combination of broach and pinnacle would be obtained.

The difficulty of repairing such spires led to the use of the parapet. This in its simplest form does not seem entirely satisfying; there seems to be a lack of connexion between the tower and the spire; the problem of forming the transition from the square to the octagon has been avoided rather than solved.

The addition of the broach to the parapetted spire as at Ashbourne does not make the design satisfactory. The use of the timber form, together with the parapet, an example of which occurs at the Round Church, Northampton, does not solve the problem, and the combination of broached spire with pinnacled tower, as at All Saints, Stamford, still leaves something to be desired. When however, the broach was abandoned and a series of pinnacles was arranged round the base of the spire, so that the latter became the dominating feature in the centre of a cluster of subsidiary ones, a fine effect is obtained. The eye is led upward by the concentration of ornament, the transition from the square to the octagon is well arranged, and still the tower and spire are kept as distinct features. Salisbury and Lichfield indicate steps in this development, which culminated in the fine example at the Church of St. Mary the Virgin, Oxford. The spire is, after all, the roof of the tower, and the easing of the transition from one to the other should not be overdone, as happened in some Continental examples—St. Stephen, Vienna, for instance—in which it is almost impossible to tell where the tower stops and the spire begins. But, after all, when one has run through the gamut of treatments, including the use of the flying buttress, as at Uffington, the corona at the fine church at Patrington, and ending up with the richest examples of open-work spires, or the type adopted at Newcastle, and by Wren at St. Dunstan's-in-the-East, one returns with increased satisfaction to the austere beauty of the simple broach type, only to regret, however, that it does not fulfil one practical requirement—it is difficult to repair.

As we have already seen at St. Dunstan's, this problem did not end with the Gothic period, and I will now deal with one or two later examples. The spire at St. Clement Danes is the work of Gibbs, and here the transition from the square to the octagon is not managed quite satisfactorily. Gibbs did better in this respect, however, in the steeple of St. Martin's-in-the-Fields. Hawksmoor, after designing a daringly original tower at Christ Church, Spitalfields, fell back on one of the earliest methods of effecting the change to the octagonal, for his spire is practically of the Early English broach type.

Wren, of course, worked out some interesting solutions of the problem in his City churches, St. Bride's being one of the least satisfactory. We may not quite like the method he adopted at St. Swithin's, Cannon-street, but one cannot but admire its direct simplicity. Wren had a habit, however, of seeing his problem clearly in three dimensions, and, tackling this problem in thorough fashion, he gave us in St. Mary-le-Bow a remarkably fine solution.

The Renaissance Period.

The next problem to be considered is one concerned almost entirely with the Renaissance period. In dealing with the problem of covering a space I mentioned the fact that in some of their great halls the Romans introduced a

* A paper read before the Leeds and Yorkshire Architectural Society on Thursday, February 13, by Mr. W. S. Purchon, A.R.I.B.A.

piece of entablature between the column and the vault. The dosseret of the Early Christian and Byzantine styles was used in a similar manner, typical examples occurring in the Church of St. Apollinare Nuovo at Ravenna. This dosseret, or additional abacus, together with the Corinthian capital, became in the course of time the Gothic capital.

In some of the Early Renaissance churches in Italy, such as St. Spirito and St. Lorenzo, Florence, a similar general arrangement to that of St. Apollinare, Nuovo, was adopted, but classical details were employed, and instead of the simple dosseret a piece of entablature was used. In a number of English Renaissance churches columns are used as supports, and, as the use of the block of entablature has been adversely criticised, it will be interesting to note how their designers dealt with this feature. The problem of the use of the column was further complicated in some of these examples by the introduction of galleries. In the Tomb of Costanza, Rome, coupled columns were used supporting an entablature at right angles to the direction of the arch. In St. Bride's, Fleet-street, Wren used a piece of entablature over the coupled columns in a similar way, which is certainly more reasonable than using it over a single column, as to some extent it appears to act as a lintel. In this example the gallery runs into the columns in a somewhat accidental manner, though it rests on flat pilasters which connect the coupled columns in the lower part. In the Church of St. Clement Danes Wren used a block of architrave form over single columns, and if a block is to be used at all this is doubtless better than one containing all the parts of an entablature. The gallery in this church is properly supported on piers, the columns starting above the gallery level. A similar block also occurs in Wren's St. Andrew, Holborn, and here, again, proper supports are used for the gallery. Gibbs, in designing St. Martin's-in-the-Fields, used a complete block of entablature over each column, and the gallery hits the shaft of the column halfway up. If the piece of entablature is an unsatisfactory device, the unworkmanlike treatment of the gallery is far more unfortunate.

In the church of All Saints, Derby, Gibbs also used the block of entablature. The Order here is Doric, so a triglyph is placed in the centre of each face of the frieze in each block.

To return once more to Wren, we find that he used an interesting entablature as a continuous feature in St. Stephen's, Walbrook, an architrave at St. Mary-at-Hill, and an architrave and cornice in the Church of St. Anne and St. Agnes. In the Church of St. James, Piccadilly, Wren gave a proper use to the entablatures by making them support barrel vaults over the aisles, and here the galleries are supported on piers, with columns starting above the gallery level. Here we have an example in which the uses of the various parts have been carefully considered, the problem seen clearly and satisfactorily solved. In St. Mary Woolnoth Hawksmoor used the entablature properly, and again in Christ Church, Spitalfields, in which the entablatures carry barrel vaults across the aisles as in the Church of St. James. The galleries have been removed from Christ Church, Spitalfields. John James, in his Church of St. George, Hanover-square, managed both gallery and entablature satisfactorily.

In cases in which groined vaults are used over the aisles and arches span from column to column, as in St. Martin's-in-the-Fields and other examples already dealt with, the entablature cannot be used in its proper manner as a continuous feature. In such cases it seems best to omit the entablature altogether and to bring the arch direct on to the capital, as was done in the Church of St. Catherine Cree, which is connected by tradition, but by tradition only, with the name of Inigo Jones.

The use of the arch resting direct on the columns was employed as we saw by the Romans at Diocletian's Palace at Spalato. Another fine example is Wren's St. Andrew-by-the-Wardrobe in Queen Victoria-street, in which square piers are used with excellent effect.

The Shop Front.

A more modern problem, that of the shop front, is the next one to be considered. It is a problem which sometimes resolves itself into a conflict between the shopkeeper and the architect. The former in extreme cases requires very little on the ground floor; all he needs being a sheet of transparent material pierced with entrances at certain points and perhaps curved on plan. The architect in extreme cases informs the shopkeeper that there must be piers of considerable width on the ground floor at rather frequent intervals, as he is following the design of the Theatre of Marcellus, or perhaps even that of the Parthenon. Fortunately these extreme cases are comparatively rare, as shopkeepers are in increasing numbers realising that beautiful goods show to better advantage in a beautiful frame than in an ugly one, and this is a view which might well be put before shopkeepers by their architects. And while the architect should not be ready to build an ugly building because his client asks for one, he should at the same time realise the special needs of the case, and not sacrifice the reasonable claims of utility for the sake of some theory of proportions devised for other purposes in a different environment.

In recent years several examples of shops and similar buildings have been erected in London which, whether we consider them perfect solutions or not, are at all events worthy of our attention as serious attempts to solve this interesting and difficult problem. The Selfridge store in Oxford-street, by Mr. Frank Atkinson, is treated in a simple, direct manner, and on a large scale. The piers and columns of Portland stone are spaced at 22 ft. centres, the width of the pier is 4 ft. 9 in., and the lower diameter of the column above is the same. Three tiers of windows in cast-iron frames are arranged in interesting and sensible fashion between the columns, and another range of windows is introduced in the frieze.

Messrs. Wallace & Gibson's solution of the problem in Messrs. Debenham & Freebody's shop in Wigmore-street is as different from the Selfridge store as it well could be, but it is no less interesting and no less successful. Here the subsidiary piers on the ground floor are 3 ft. 8 in. wide, and are spaced at 21 ft. 3 in. centres, larger piers being placed at intervals. The piers support semicircular arches, and the lower part of the building is thus given an appearance of ample strength. A particularly interesting feature of the design is the dignified manner in which the entrance and entrance hall are treated. Carrara ware is used externally, and there is no doubt that this and similar materials are particularly useful in city buildings, even more so in manufacturing cities than in the West-end of London.

In Messrs. Mappin & Webb's premises in Oxford-street Mr. Belcher has approached more nearly to the requirements of the shopkeepers. The supports he has adopted are spaced at about 17-ft. centres, but they are only about 2 ft. wide. The result would have been even more satisfactory than it is had the upper stories been treated somewhat more lightly with fewer projections. The material used in the façades is an interesting one—Pentelicon marble.

Messrs. Whiteley's new buildings, Queen's-road, Bayswater, were designed by Messrs. Belcher & Joass. This design approaches even more closely to the shopkeeper's requirements, and as a result is somewhat lacking in apparent strength on the lower floor. Here, again, a somewhat lighter treatment of the upper stories, particularly in the case of the intermediate supports, would probably have given a more satisfactory result. Grey granite from Cornwall is used for the external columns on the ground floor, while the remainder of the external masonry is of Portland stone. The coupled columns on the ground floor are about 2 ft. 9 in. in diameter, and the main supports are spaced at about 45-ft. centres.

The Regent-street Polytechnic is by no means a shop, yet the lower part of its Portland stone façade (designed by Mr. Frank T. Verity) required a somewhat shop-like treatment. The ground floor has been treated with great severity, plain piers being surmounted by equally plain flat arches, and this very plainness helps to give the necessary appearance of strength to the lower part. Ionic columns rise from the piers through three stories, the windows in the two upper ones being arranged in cast-iron window-frames, while the fourth-floor windows come in a kind of attic, with, however, the main cornice above them. The piers on the ground floor are 3 ft. 3 in. wide, and are spaced at 21 ft. 9 in. centres.

Messrs. Burberry's new premises in the Haymarket, recently erected from Mr. Walter Cave's designs, is an extremely interesting example. The ground floor piers are about 3 ft. 6 in. wide and 13 ft. 6 in. from centre to centre, with stronger piers arranged at the angles. The treatment of the upper windows with leaded lights, steel casements, and cast-iron panels is excellent. Messrs. Burberry's requirements would differ from those of, say, a general draper, and Mr. Cave's solution of this special problem is surely very admirable.

Five problems, some as old as the architects' craft and others of more recent date, have now been dealt with, and it is hoped it has been shown that, by approaching the study of architectural history with the thought in mind, that it is the history of the solving of problems, the study becomes more real and more useful.

Summary.

It is also hoped that the proper attitude of the architect towards his work has been indicated, if indirectly. He should try to see the problem clearly in all its bearings, and then endeavour to solve it honestly and straightforwardly, avoiding makeshifts and neither deceiving himself nor his fellows. Such solutions are to be found in the Parthenon, in many examples of Early Gothic architecture, in the domestic work built on traditional lines during the late Gothic and Early Renaissance period, and in such a building as Inigo Jones's Coleshill, with its fine roof and chimney-stacks. These examples, and many others which have come down to us from the past, are useful to the architect and to the student of architecture, not as copies, for we have progressed beyond that stage, but for the lessons they teach of suitability to purpose and of success achieved after struggles with difficulties.

The problems before the present-day architect are of great number, and it is increasingly difficult for him to be master of all the branches of the profession; and yet beyond the problems he solves for his clients there are further problems in which the architect, fortunately for his art, is interested.

Of these perhaps the most important is the problem of education. It speaks well for the profession that so many architects have, at considerable sacrifice, devoted so much of their time and energy to this question in the hope that the coming generation of architects will be better equipped than the present one. During the last few years great strides have been made in architectural education, and, in addition to the schools of the Royal Academy and the Architectural Association, there are now schools of architecture in connexion with most of the Universities in this country. Some of these may as yet be small, but each is helping to raise the standard of architectural education in its district and to increase the interest of the public in architecture.

It surely augurs well for the future of architecture in this country that the Universities have taken up this problem, for these institutions are without doubt the ones which are best able to impart that breadth of outlook which is so necessary for the solution of the problems of our profession. And the influence of the Universities cannot but be for the good of the Institute with which they have been brought into contact.

This question of breadth in architectural training is a very important one. It is comparatively easy to get what appear on the face of things to be better results by a process of dogmatic teaching and concentration on a specialised branch of the subject, and so this system is attractive both to students and to architects. But it must be borne in mind that, after all, it is what a man does in the years after his apprenticeship that is of importance. So we shall do well to see that the next generation of architects gets a sound general education to begin with, and it is noteworthy that the latest society to be allied to the Institute of British Architects, the South Australian Institute, has set an excellent example in this respect.

The foundation of architectural education should be sound and broad, and of a kind that encourages the student to think, so that in after life he will be able to bring to bear on his work the logical mind which sees the nature of the problem, grasping the essential and rejecting the non-essential. Such a man will not endeavour to fit in a plan with some preconceived notion of an exterior, and he will not be carried away by the fashion of the moment, be it what it may. He will realise the importance of the proper treatment of the materials he is using, the importance of sound, honest construction, the importance of suitability to environment and purpose.

The last problem to be considered is another

educational one, but this time concerned not with the education of the architect, but rather with that of the public.

This is surely one of the most important problems of the many with which the architect is confronted at the present time. For he cannot thrust his architecture down the throat of an unwilling public, and at the present time architecture is considered by the general public as something which is not worth the extra expense it is supposed to involve.

So the public must be convinced that architecture is not a whited sepulchre, not a matter of pretty façades with inefficient accommodation behind them. Architects must kill the old idea of the "artistic" architect, the man who made pleasing drawings, but had no interest in sanitation and construction. They must prove that architecture means beautiful and efficient building, the thorough solving of real problems.

Architects can do much in this direction by the example of their works, but that must be supplemented in other ways. Architecture must once more become a part of a liberal education, and with this end in view it is to be hoped that each of our Universities will not only award degrees to professional students of architecture, but will also include architecture as one of the subjects for the Intermediate and Final examinations for the degree of Bachelor of Arts.

There should also be a serious attempt made to reach the public outside the Univerities by means of University Extension and other courses of lectures. The non-technical Press must be encouraged to deal adequately with architecture, and architects must try to give the antiquary an interest in their views.

And in this education of the public in architecture, both inside and outside the Universities, architecture must be presented not so much as a matter of detail and date as the study of the amateur has been in the past, but the subject must be made to live by bringing to the front the questions of architectural construction and criticism.

And out of this dual education, that of the coming architect and that of the public will arise the architecture of the future, simpler perhaps than much seen in course of construction nowadays. It will not be Greek, it will not be Gothic, but it will surely have the beauty given by good proportion, by honesty of construction, by harmony and fitness. It will be, as Greek and Early Gothic architecture were in their days, a clear-cut logical solution of the problem. W. S. PURCHON.

THE SOCIETY OF ARCHITECTS.

AT a meeting of the Society of Architects, held on March 13, a paper was read on "Wallpapers" by Mr. Noel D. Sheffield, which was illustrated by numerous examples. Wallpapers were not in common use in Europe until the eighteenth century, though they were used at a much earlier date in the East. It was not until the end of the eighteenth century that machinery for printing them in strips was introduced, previous to which they were hand printed on small squares. William Morris was the first pioneer of our time to show what could be done to give papers a decorative value, and it was said he owed much to a work entitled "Gerarde's Herbal," a seventeeth-century work, the illustrations in which are woodcuts, in which plants and foliage are drawn in a simple and effective manner resembling pressed specimen leaves and flowers. Among others who have paid attention to wallpaper design may be mentioned J. D. Sedding, Walter Crane, Heywood Sumner, Lewis F. Day, and C. F. A. Voysey, but the most modern tendency appears to be to revive Jacobean and old Chinese and Japanese textile patterns, adapting them to modern methods of manufacture.

The lecturer emphasised the fact that the cost of papers had no relation to their design, and that with so much good and cheap material to select from it was a pity that atrocious patterns should find a sale, a result due no doubt to the fact that a selection is often made from books supplied by a small decorator.

The Japanese display great originality and love for variety in the papers they use to cover their walls and screens, and will not tolerate the monotony created by dull mechanical reproduction. William Morris's advice was "to mask the construction of our pattern enough to prevent people from counting the repeats of our pattern. If we are successful we shall obtain a book of satisfying mystery which is essential in all patterned goods."

White painted woodwork forms the best setting for wallpapers. If many pictures are to be hung a marked design should be avoided. The greatly increased use of self-coloured papers has arisen from this cause.

Oil paintings in gilt frames look best against a brown background, while engravings and photographs look better against a light yellow or grey paper.

The lecturer made reference to the weird hints given to amateur decorators in the columns of ladies' papers, contrasting them with William Morris's simple advice. "Have papers with pretty patterns if you like, but if you don't I beg of you quite seriously to have nothing to do with them, but to whitewash your walls and be done with it."

The subject of manufacture was next dealt with. "Machines" is the name given to all papers printed by machinery, comprising quite 90 per cent. of the whole.

"Pulps" are the commonest description of paper in the market, the pattern being printed direct on the paper, the colour of which forms the background.

"Satins" are papers with a smooth polished surface, the general effect of which resembles satin, which result is obtained by the use of finely-ground French chalk to the paper, which is then polished by machinery.

"Micas," or "satinettes," are those having the ground treated with a composition of which mica forms part, an iridescent surface being thus obtained.

"Wool flocks," also called velvets, are printed in a pattern on some adhesive substance, upon which is finely-ground dyed wool, a relief effect being obtained.

"Silk flocks" are similarly produced.

"Ingrains" are cheap self-coloured papers with a rough surface, produced by the application of a hair flock. The best are made in Scotland, others in Germany.

"Silk fibres" are similar, but of higher quality and English manufacture.

In "metal papers," "bronzes," and "gilts" metals are used. "Sanitary papers" are printed in oil colours, and "hand-printed papers" are painted from wood blocks.

The lecturer concluded by giving an account of the process of manufacture and in dealing with paperhanging and arsenical papers and the tests by which they could be detected.

It is interesting and satisfactory to know that in the trade of papermaking this country is supreme.

MAGAZINES AND REVIEWS.

IN the February number of the *Studio* we have an article on the works of Frank Mura, which are delightfully composed and treated. "Recent Essays in Domestic Architecture," illustrated by the domestic work of Messrs. Cossins, Peacock, & Bewlay, Arnold Mitchell, F. S. Chesterton, and others; and an article illustrated by charming colour reproductions on "Chinese Charms and Amulets." Other matter contained deals with the "Arts and Crafts Exhibition and Studio Talk"; in the latter some fine work from America and the Continent is illustrated, notably that of Paul Paeschka. The article on the "National Art Gallery of Canada" is of interest. Altogether the number is one which maintains the high reputation of the *Studio*.

The *Connoisseur* for March is an interesting number, containing Part III. of Mr. Fritz Reiss' mezzotint portraits, by Mr. Reginald Grundy; a review of volume (Vol. V., R-S) of Forrer's "Dictionary of Medallists," containing an interesting medallion of Lucrezia Borgia, by G. Romano, and of Louise de Quérouaille, afterwards Duchess of Portsmouth, by J. Roettiers; some charming examples of floral painting on porcelain of the English school, and current art and furniture notes. The colour illustrations, which include the "Adoration of the Kings," by Mabuse, and "L'Indiscrétion," by Janinet, are particularly fine examples of reproduction.

The *Burlington* contains a fine reproduction of Carlo Crivelli's "Madonna and Child," reproduced from the original in Mr. Philip Lehmann's collection; the fourth part of an article on Chinese porcelain, by Friedrich Perzyński; an altar-piece, by Bartolomé Bermejo, from the old cathedral at Salamanca; the third part of an article on "Cassoni Panels in English Private Collections," by Paul Subring; an article on "Early Scotch Spoons"; the eighth part of "Early Furniture," by Aymer Vallance; an interesting article dealing with the ecclesiastical hat in heraldry, by Egerton Beck; and notes and reviews on various works of art. An unpublished portrait, by Moroni, of a Bergamasque Noble, is a particularly fine example of the painter's work.

We have before us an excellent number of the *Architectural Review* for November (Boston, U.S.A.), which contains some fine reproductions of Mr. Bodley's Church at Kensington Gore, and the memorial screen in St. Elphin's Parish Church at Warrington by Messrs. Wm. and Segar Owen. Interesting articles are contributed on the "Hampstead Garden Suburb," and a serial article, entitled "Extracts from the Log of the *Dorian*," with illustrations of details from the Theatre of Dionysos. The main part of the issue is given to illustrations of American houses of the smaller size. It is altogether an interesting number.

The March number of *Moderne Bauformen* is illustrated by numerous examples of the weird combination of architectural features which obtains favour among our Teutonic neighbours, among which we may note the convalescent home for the employés of Messrs. Siemens & Halske, at Harzburg. The irritating feature of much of the modern German work is that a very little restraint and a slightly more marked appreciation of the value of proportion would render it good, but it is just that little which seems in every case to be wanting. The renovation of the church at Nieden, in Uckermark, is interesting. The domestic work illustrated and examples of colour decoration given are weird and unpleasant, as are also the examples of architectural sculpture given Germans alone of civilised people seem to appreciate the grotesque to a degree which is alien to us. We think that in the domain of art generally Germany might be wise in encouraging the principle of free imports of foreign art and artists!

Harper's Magazine includes an illustrated article by W. D. Howells, entitled "First Days in Seville," with illustrations from drawings by Norman Irving Black. It is a gossipy article, which will be of interest to those who have visited Seville.

The *Nineteenth Century* contains an interesting article on "The Art of Alma Tadema" by John Collier.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the Metropolitan Asylums Board on Saturday, the following matters were dealt with:—

South-Eastern Hospital.—A letter was received from the Local Government Board requesting the managers to consider an alternative arrangement for providing additional accommodation for nurses at this hospital. A plan was also approved for alterations to the Engineer's cottage at an estimated cost of £205.

Tooting Bec Asylum.—The recommendation for the enlargement of this Asylum, particulars of which have already been given, were approved subject to the consent of the Local Government Board.

Quantity Surveyors.—Messrs. W. T. Farthing & Son were appointed to take out the quantities for works to be carried out at the Southern Hospital in accordance with the specification prepared by the Engineer-in-Chief at a commission of 2½ per cent. on the accepted tender.

South-Western Hospital.—The tender of Mr. E. Wall, of Summerstown, S.W., amounting to £360, was accepted for the erection of a coal store.

METROPOLITAN WATER BOARD.

THE following matters, amongst others, were dealt with at the monthly meeting of the Metropolitan Water Board on Friday:—

Staff.—In connection with the annual revision of salaries, it was agreed that Mr. W. H. M. Knox, of the Engineers' Department, be designated Chief Architectural Assistant, and that his salary be increased from £260 to £300 a year.

Office Accommodation.—The General Purposes Committee reported that the subject of new central office accommodation was receiving their anxious consideration, but in the meantime certain recommendations were made for obtaining fresh temporary additional accommodation.

City of Ottawa Water Supply.—Letters were received from the City Council of Ottawa and Lord Strathcona, thanking the Board for its great kindness in allowing Dr. Houston to go to Ottawa to advise upon the water situation there. It was further reported that the City of Ottawa had voted Dr. Houston a fee of 5,000 dollars, which, under the rules of the Board, should, unless otherwise ordered, be paid into the Water Fund. Under the exceptional circumstances it was agreed that Dr. Houston should be allowed to retain the fee, less the sum of £87 10s. 10d., in respect of his net salary during the period of his actual absence from England.

LONDON COUNCILS.

Bermondsey.—Plans have been passed for Messrs. P. & G. Geen, surveyors, 57, Waterloo-road, S.E., for the widening of Kintore-street, and the erection of new flats; also for Mr. H. D. Searles-Wood, architect, 157, Wool Exchange, E.C., for the erection of a building in Jamaica-road.

Bushey.—Plans have been passed for Messrs. Clutterbuck & Co. for additions to the "Stag" beer-house in Merryhill-road.

Camberwell.—Plans prepared by Mr. A. E. Mullins have been approved for the erection of an addition at the Gordon-road Workhouse.

Croydon.—The Guardians have accepted the tender of Messrs. W. Smith & Sons, London-road, at £1,219, for carrying out alterations to the receiving wards at the workhouse. The necessary steps are to be taken for the erection of a block of schools, with accommodation for about 700 children, in Tamworth-road. Plans have been passed as follows:—Mr. C. G. Allen, twelve houses, Norbury Court-road; Mr. J. Weller, 126 houses, Dalmally-road; Mr. W. Nettle, twenty-eight houses, Ashburton-avenue; Messrs. Wratten & Godfrey, institute and halls, Crown-hill; Mr. D. Weightman, six houses, Godstone-road and Christchurch-road East; Mr. W. E. Trent, cinematograph hall, 22, Westow-hill; Mr. O. Gray, four houses, Pollard's-hill West.

East Ham.—Plans have been passed for Mr. F. Hamlett for the erection of twelve houses in Cotswold-gardens. Plans have been lodged by the Pure Bread Company and the Stratford Co-operative Society, for extensions to the bake-house at the corner of Barking and Priory roads, and for the erection of shops, with dwelling-house over, in High-street South, respectively.

Hackney.—Plans have been passed for Mr. F. Collins and Messrs. O. Brown & Co., for the erection of ten houses in Springfield-gardens, Upper Clapton, and for a factory in Englefield-road, respectively.

Hendon.—The following plans have been passed:—Mr. Godfrey Nash, motor works, rear of Albert-road; Mr. J. H. Neighbour, six houses, Egerton-gardens; Hampstead Tenants, Ltd., alterations and additions to the Club-house; Mr. J. D. Rawlins, six houses, St. George's-road; Mr. J. Robinson, seventeen houses, Annesley-avenue; Mr. J. W. Rawlins, jun., six shops, Finchley-road.

Heston and Isleworth.—Plans have been passed for the London County and Westminster Bank, Ltd., for alterations to their premises in Bath-road, Hounslow.

Hornsey.—Messrs. F. Cottrell, Ltd., of Crouch-hill, have had plans passed for alterations and additions to Beverley House, Colney Hatch-lane, Muswell-hill.

Ilford.—The following plans have been passed:—Mr. A. Grimes, fourteen houses, Francis-avenue; Mr. A. R. Upsdale, on behalf of Mr. T. W. N. Morris, five houses, Westwood-road; Messrs. Higgins & Thomerson, on behalf of Mr. W. H. Knox, twenty houses, South Park-drove; Mr. E. T. Dunn, on behalf of Messrs. G. White & Co., additions at rear of 78 and 80, High-road; Messrs. B. Bailey & Co., on behalf of Mr. F. B. Harrison, seventeen houses, Balfour-road; Messrs. Howard & Sons, Ltd., buildings at Uphall Works, Uphall-road; Mr. E. T. Dunn, on behalf of Lord Rowallan, four houses, Aberdour-road.

Kensington.—The Architect to the Guardians (Mr. E. Flint) has been instructed to prepare a specification and estimate of the cost of plastering the walls and relaying the floors of four wards and the adjoining rooms in the infirmary with "Armadek."

Leyton. — The Higher Education Committee have under consideration the erection of a new county high school for boys. Plans have been passed for Mr. E. A. Russell for extensions to a laundry, High-road, Leytonstone, and for Mr. A. Radcliffe, for the erection of sixteen houses in Colchester-road. Plans have been lodged by Mr. G. L. Westgate and Messrs. Good Brothers for alterations to premises, High-road, Leytonstone, and for the erection of four shops, at the corner of Bakers'-avenue and Hoe-street, respectively.

Merton.—The tender of Mr. S. Lane, 22a, Cecil-road, Wimbledon, has been accepted at £460 12s. for making up Manor-gardens.

Middlesex.—The Education Committee of the County Council intimate their intention of erecting a public elementary school in Tottenhall-road, Southgate. The tender of the Durax Dustless Roads, Ltd., has been accepted, at £4,735, for laying "Durax" paving in a portion of Uxbridge-road, Southall. Alterations are to be carried out at the new County Hall, Westminster, at a cost not to exceed £1,500, and the work is to be given to Mr. James Carmichael, the contractor for the erection of the whole building.

Romford.—The tender of Messrs. Muirhead, at £1,166, has been accepted for the erection of sewage works at Chequer's-lane, Dagenham.

Southgate.—Plans have been passed as follows:—Mr. R. W. Hill, thirty-six houses, Prince's-avenue, Palmer's Green; Mr. A. Arnott, eight houses, Harlech-road; Messrs. S. F. & H. W. Grover, garage, South-road, New Southgate; Mr. W. A. Goring, six houses, St. George's-road; Mr. J. R. P. Newman, M.P., addition to the Institute, High-road, New Southgate; Rev. N. Richards, Congregational church and schools, Fox-lane, Palmer's Green. The tender of Mr. A. Thompson has been accepted, at £1,047, for the construction of an open-air swimming-bath. It was originally proposed to erect offices and other buildings as well, but, owing to the amount of the tender of this work being in excess of the amount sanctioned to be borrowed (£2,350), it was decided to construct the baths only at the present time, and to consider further the parts of the tenders relating to the other work at a later stage.

Stepney.—The Borough Council is to co-operate with the London County Council for securing the widening of Three Colt-street in connection with the enlargement of the Gill-street School.

Twickenham.—The following plans have been passed:—Mr. J. Elmes, two houses, Nelson-road; Mr. J. S. Alder, church, Campbell-road; Messrs. Brewer, Smith, & Brewer, two houses, Manor-road; Messrs. T. J. Messom & Sons, alterations to Wheatsheaf Brewery, Colne-road.

Walthamstow.—A Sub-committee has been appointed to make a thorough inquiry into the question of the erection of houses in the Higham Park District. Plans have been approved for making up the remaining portion of Beech Hall-road. A cleansing-station is to be provided at Lloyd Park at an approximate cost of £120. A plan has been passed for Mr. Bishop for the erection of a warehouse in Greenleaf-road.

Watford (Rural)—Mr. Luck has had plans passed for the erection of four houses in Abbots-road, Abbots Langley.

West Ham.—The tender of Messrs. F. Smith & Co. has been accepted, at £195, for erecting a corrugated iron tuberculosis dispensary in Balaam-street. Plans have been passed for Mr. C. Living, jun., for the erection of an asbestos factory in Stephenson-street, Canning Town. Mr. A. Smith has lodged plans for extensions to a cinematograph theatre in Leytonstone-road, Stratford.

Willesden.—Sanction has been received from the Local Government Board to the borrowing of £3,030 for the erection of a temporary school in Bridge-road on the Doecker system. Application is to be made to the Local Government Board for sanction to a loan of £3,318 for the erection of an electricity sub-station in Barret's Green-road. It has been decided to erect slipper-baths upon sites in Church End and South Kilburn, at a cost not exceeding £4,500 in each case. With regard to Church End, the site is to be laid out so as to leave room for the provision of a swimming-bath at a future date. The following plans have been passed:—Messrs. J. C. World & Co., twelve houses, All Souls'-avenue; Mr. C. W. B. Simmonds, four house, Teignmouth-road; Mr. G. O. Scorer, on behalf of Messrs. De Dion Bouton (1907), Ltd., engineering and motor-car works, Edgware-road, Cricklewood; Mr. G. H. Paine, on behalf of Mr. F. Brealy, four houses, Gladstone Park-gardens; Mr. W. Crosier-Hayne, addition to garage, St. Gabriel's-road. Plans have been lodged by Mr. George Duckworth, on behalf of the Acme Picture Palace Company, Ltd., for a cinematograph theatre at the corner of Chamberlayne and Bannister roads, Kensal Rise, and Mr. Albert Howell, for the Kensal Rise Picture Palace, Ltd., for a picture palace in Kilburn-lane and Chamberlayne-road.

Wimbledon.—Twelve tenders have been received for the erection of an additional ward at the Isolation Hospital. After consideration the Council have decided to do the work by direct labour at an estimated cost of £3,880. Plans have been passed for Messrs. T. Jay Evans & Son, for alterations to No. 31, The Broadway, and for Messrs. W. & C. Brown, for additions to the incandescent mantle factory in Ravensbury-road. Plans have been lodged by Mr. J. E. Ashby for the erection of a garage off High-street, Merton, for the London General Omnibus Company, Ltd., and by Messrs. G. Godson & Sons, for the erection of a church at the junction of Crescent-gardens and The Crescent.

OBITUARY.

Mr. S. A. Stanger.

Mr. S. A. Stanger, quantity surveyor, of Finsbury-pavement, died in St. Bartholomew's Hospital on the 7th inst., as the result of injuries received in a fall from the roof of the River Plate House in the City. Mr. Stanger was surveying the roof of the premises when he fell over the parapet into the area at the back of the building. He died a few hours after his admission to the hospital. Mr. Stanger was fifty years of age, and was well known in his profession.

Mr. Thomas R. Way.

We regret to record the death of Mr. Thomas R. Way, author and lithographic artist, which occurred suddenly on February 28 at No. 110, Regent's Park-road, Primrose-hill, N.W. Mr. Way, who was born on August 13, 1861, was educated at Archbishop Tennison's School, at Hurstpierpoint, and King's College, and he studied art at South Kensington and at Julien's Studio, Paris. The deceased was the son of Mr. Thomas Way, now of Gough-square, E.C., the printer of substantially all Whistler's lithographs. Some years ago he produced a volume of drawings (with Mr. H. B. Wheatley) of "Reliques of Old London," the first of a series which has preserved the aspect of many historic buildings which have been swept away. A later volume was "The Thames from Chelsea to the Nore," with forty drawings. It was about 1885 that Mr. Way first went into business, and for several years about this time he exhibited pictures at the Royal Academy and elsewhere. In 1910 he started a remarkable series of posters, mostly printed on brown paper and drawn from his original sketches, which made his name well known and raised his reputation as an artist and lithographer. In our issue for July 19, 1912, we gave an example of Mr. Way's lithographic work, *i.e.*, an interior view of Winchester cathedral, showing the nave looking east.

PATENTS.

APPLICATIONS PUBLISHED.*

27,796 of 1911.—Henry Ismay Moralee Ross: Double current ventilation and ventilators therefor.

2,990 of 1912.—Frank Biggin and Thomas Henry Firth: Steam or water connections for swing radiators and the like.

3,136 of 1912.—Edward Frederick Stimson: Cooking-stoves.

3,537 of 1912.—Ernest Snutsel: Apparatus for preventing rattling of doors.

3,676 of 1912.—Thomas Boyle: Means for repairing burst pipes and for like purposes.

4,423 of 1912.—Arnold England: Construction of chimneys, towers, and other hollow structures.

4,424 of 1912.—Arnold England: Artificial blocks or slabs and reinforcement for same.

10,385 of 1912.—Archibald John Orr and William Albion Haskins: Window with ventilating screen.

10,642 of 1912.—Thomas L. Smith and Eduard Wingfield Brackenburg: Machines for mixing paving materials and the like.

11,483 of 1912.—Duncan Sinclair and Sinclair Iron Company, Ltd.: Fireplaces.

12,293 of 1912.—Thomas Davis: Method of forming blocks for structural and decorative purposes.

18,056 of 1912.—Richard Greenhalgh: Door-locking devices.

18,883 of 1912.—Wolf Laufer: Process for the production of artificial stones from natural rock waste.

21,469 of 1912.—Muribloc (Partition Slabs), Ltd., and John Charles Snelling: Slabs for building purposes.

22,217 of 1912.—Wilhelm Eugene Kreins: Conveyor shoots or shaker channels.

PATENTS—*continued on page 335.*

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xx.; Auction Sales, xxvi. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Competitions.

* MARCH 27.—**Exeter.**—HOSTEL.—The Exeter City Council invite designs for the erection of a hostel for male students. Assessor, Mr. Edwin Cooper, F.R.I.B.A. See advertisement in this issue for further particulars.

MARCH 31.—**Ipswich.**—LAYING-OUT SUBURB.—The Ipswich B.C. invite competitive designs for laying-out 26 acres of land as a working-class suburb on the lines of a modified garden city. See advertisement in issue of January 31 for further particulars. Plans and particulars in issue of February 28, p. 265.

APRIL 9.—**Abertillery.**—ELEMENTARY SCHOOL.—"No premium will be paid, but a qualified assessor will be appointed." Particulars from the Council Offices, Abertillery

APRIL 16.—**Staines.**—COTTAGE HOSPITAL.—Particulars from Mr. H. Scott Freeman, Staines.

APRIL 18. — **Reading.** — SCHOOLS.—The Reading Education Committee invite designs for the Kendrick Boys' and Girls' School. Competition limited to architects resident or carrying on business within the borough. See advertisement in issue of January 24 for further particulars.

April 19.—**Motherwell.**—NEW HIGH SCHOOL.—The School Board of Dalziel invite designs for new high school. Conditions of competition can be obtained on or before February 15. Assessor, Dr. J. J. Burnet. See advertisement in issue of February 7 for further particulars. See also "Competition News" (p. 266) in issue of February 28.

APRIL 21.—**Northampton.**—COUNCIL SCHOOL.—Local architects only. Second premium, 20 guineas; third premium, 10 guineas. Particulars from the Education Offices, Northampton.

APRIL 29.—**Barnet.**—MUNICIPAL OFFICES.—The Barnet U.D.C. invite designs for new Municipal Offices. Premiums £25, £15, and £10. See advertisement in issue of January 31 for further particulars.

MAY 31.—**London.**—COTTAGES AND BUNGALOWS.—Three premiums of £50 each are offered. Particulars from the Secretary, Ideal Home Exhibition, 130, Fleet-street, E.C. Assessor, Mr. Leonard Stokes, F.R.I.B.A.

JUNE 14. — **Devonport.**—MUNICIPAL BUILDINGS AND GUILDHALL.—The Devonport Corporation invite designs for Municipal buildings and Guildhall. Premiums of £350, £150, and £100 respectively. See advertisement in issue of February 21 for further particulars. Plan, etc., in issue of February 28, p. 265.

JULY 1. — **Sofia.** — DESIGNS FOR A ROYAL PALACE AND LAW COURTS.—Particulars from the Commercial Intelligence Branch of the Board of Trade, Basinghall-street, E.C. See page 178, August 9, and page 350, September 27, 1912.

JULY 10. — TOWN-PLANNING SCHEME. — Promoted by the Institution of Municipal and County Engineers. Premiums, 10 guineas, 7 guineas, and 5 guineas.

NO DATE. — **Grays.** — SUNDAY-SCHOOL. — The Building Committee of the Baptist Tabernacle, Grays, invite designs for new Sunday-school. See advertisement in issue of March 7 for further particulars.

Contracts.

BUILDING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

MARCH 14. — **Foveran.** — RESTORATION.—For restoring the house, Newtyle, Foveran. Plans and specifications with Messrs. D. & J. R. M'Millan, architects, 105, Crown-street, Aberdeen.

MARCH 14.—**Preston.**—SHELTER.—For erection of a shelter at the junction of Stanley-street and New Hall-lane. Plans seen, and form of tender and information, at the office of the Borough Surveyor, Town Hall, Preston, on deposit of 10s.

MARCH 15.—**Keswick.**—HOUSE.—For the erection of a house at Chestnut-hill, Keswick. Mr. W. W. Brindle-Wood, Derwentwater Estate Office, Keswick.

MARCH 17.—**Aberdeen.**—ADDITIONS.—Additions to the farm steading at East Pitdoulxie, Auchterless Station. Plans and specifications at the Estate Office, Auchterless Station.

MARCH 17.—**Hambledon.**—HOME.—For erection of a new home for nurses at the Workhouse Infirmary, Hambledon. Plans and specification with the architect, Mr. E. L. Lunn, 36, High-street, Guildford. Quantities and form of tender on deposit of £2 2s.

MARCH 17. — **Harrogate.** — SHELTER.—For the erection of a cabmen's shelter opposite the Royal Baths. Plans seen, and particulars from Mr. C. E. Rivers, A.M.Inst.C.E., Borough Engineer.

MARCH 17.—**Rishton.**—HOUSES.—For the erection of seven dwelling-houses in St. Charles-road, Rishton, for the Rishton Industrial Co-operative Society, Ltd. Plans and specifications seen at the Society's offices, 25, School-street, Rishton.

MARCH 17.—**Semington.**—WORKS.—For sundry builders' and painters' works at the Workhouse, Semington. Specifications with Mr. W. W. Snailum, architect, Church-street, Trowbridge.

MARCH 18. — **Cwmcarn.** — COTTAGES.—For the completion of ninety-eight workmen's cottages at Cwmcarn, Mon. Plans and specifications, on deposit of £2 2s., with Mr. J. Williams, Surveyor, Abercarn.

MARCH 18. — **Sileby.**—STABLES.—The Directors of the Midland Railway Company invite tenders for the erection of stables (in brick) at Sileby. Plans, specifications, quantities, and particulars at the Engineer's Office, Derby Station.

MARCH 19. — **Armagh.**—REBUILDING.—For the rebuilding of the picture theatre, Russell-street, Armagh. Plans and specifications from Mr. Thomas Houston, architect, Kingscourt, Wellington-place, Belfast.

MARCH 19.—**Elland.**—HOTEL.—For erection of a new hotel in Jepson-lane, Elland. Plans seen, and quantities from Messrs. J. Berry & Sons, architects and surveyors, 3, Market-place, Huddersfield.

MARCH 19. — **Whitehouse.** — HOUSE, ETC.—For erecting a caretaker's house, erecting a barbed-wire fence, and constructing a new roadway. Plans and specifications by Messrs. Young & Mackenzie, civil engineers, Scottish Provident-buildings, Belfast. Also for laying 300 lin. yds. of 9-in. sewer pipes on Shore-road, at Whitehouse. Plan and specification by Mr. W. D. R. Taggart, C.E., Scottish Provident-buildings, Belfast. Plans and specifications also seen with Mr. R. G. Jackson, Clerk to the Council, Council Office, Union Workhouse, Belfast.

MARCH 20.—**Bacup.**—SHOPS, ETC.—For erection of three shops in Bacup for the Bacup Co-operative Stores, Ltd. Architect, Mr. H. Cropper, St. James's-street, Bacup.

MARCH 20.—**Bishop's Castle.**—MARKET.—For erecting cattle, sheep, and pig pens and other works in Station-street, Bishop's Castle. Plan and particulars from the Borough Surveyor, 3, Salop-street, Bishop's Castle.

MARCH 20. — **Haslingden.**—CONVERTING.—For the conversion of the present wood store into a disinfector house. Plans seen, and quantities from Mr. H. Ross, A.R.I.B.A., 15, Cannon-street, Accrington.

MARCH 20.—**Pontypridd.**—OFFICES, ETC.—For the erection of new offices and other buildings at Albert-road, Graig, Pontypridd, for the Imperial Friendly Society. Plans and specification seen, and quantities, on deposit of £1 1s., from Mr. T. J. Jones, architect and surveyor, Llwyn Onn, Trehafod, Pontypridd.

MARCH 20. — **Weymouth.** — PREMISES.—For building new premises for the refuse destructor at Sunny Bank. Particulars from Mr. K. J. S. Harris, Borough Surveyor, Municipal Offices, Weymouth.

MARCH 22.—**Haverfordwest.**—REBUILDING.—For the rebuilding of a portion of the Cartlett Bridge approach wall. Specification and particulars from Mr. A. Thomas, County Surveyor, St. Thomas-green, Haverfordwest.

MARCH 22. — **Hethersgill.** — IMPROVEMENT.—Improvement at Hallfoot Mill, Hethersgill, consisting of a new stone oblique bridge, 15 sq. ft. span, and a new roadway. Plans and specifications with Mr. James Murray, Surveyor, Kirklinton.

MARCH 22. — **Penclawdd.** — ROOMS, ETC.—For the enlargement of the Llanyrnewydd Church mission-room, including erection and completion of the hall, a clubroom, a lodge-room, and a kitchen, gas and heating rooms, etc. Plans and specification with Mr. D. Thomas, architect, Penlan, Penclawdd.

MARCH 22.—**Pontypridd.**—BUILDING.—Erection of a building for the accommodation of a chemical plant at Lluest Wen Reservoir, Mardy. Plans, specification, and quantities, on deposit of 10s., from the Board's Engineer, Mr. Ernest W. Terrey, 27, Gelliwastad-road, Pontypridd.

MARCH 24. — **Bargoed.**—RESIDENCE.—Erection of a residence at Bargoed. Plans and specifications with Messrs. Wm. Harris & Son, architects and surveyors, Bank-chambers, Bargoed, Glam.

MARCH 25.—**Sheffield.**—BRIDGE.—For light reinforced concrete bridge to cross the Great Central Railway Company's main line. Drawings and specification, form of tender, and conditions of contract at the offices, Commercial-street, Sheffield. Deposit of £1 1s.

MARCH 25.—**Shoeburyness.**—SHELTERS.—For the erection of five wooden shelters on the Common and Whitakers Promenade, at Shoeburyness. Also for construction of concrete foundations for shelters Drawings and specifications with the Council's Surveyor, Mr. F. Feather, Council Offices, Shoeburyness.

MARCH 25.—**Ugborough.**—RESERVOIR.—For the construction of a 20,000-gallon storage service ferro-concrete reservoir at Ugborough, Devon. Specifications, quantities, and form of tender, on deposit of 10s. 6d., from Mr. Parmenas Pearce, A.S.I., Water Engineer, Horsebrook, Avonwick, South Brent, Devon.

MARCH 25. — **Wrabness.**—ADDITIONS.—For the several alterations and additions to the "Black Boy" Inn, Wrabness, for Messrs. Steward & Patteson, Ltd., Pockthorpe Brewery, Norwich. Plans and specifications with Mr. J. W. Start, F.S.I., architect and surveyor, Colchester.

MARCH 26. — **Llanhilleth.**—THEATRE.—For the erection of a theatre at Llanhilleth for the Llanhilleth Theatre Company, Ltd. Plans and specifications seen, and quantities, with form of tender, on £2 2s. deposit, from Mr. N. Gasenius Lewis, architect and surveyor, Abertillery.

* MARCH 26. — **Southend-on-Sea.** — NEW SCHOOL.—The Southend Education Committee invite tenders for the erection of a new school. See advertisement in this issue for further particulars.

* MARCH 27.—**Friern Barnet.**—COTTAGES.—The Friern Barnet U.D.C. invite tenders for erection of fifteen workmen's cottages. See advertisement in this issue for further particulars.

MARCH 27. — **Leyton.** — ROOM.—For an additional dressing-room at the Public Baths, Cathall-road. Specification, quantities, and form of tender from Mr. E. H. Essex, A.M.Inst.C.E., Engineer and Surveyor to the Council, at the Town Hall, Leyton.

MARCH 27. — **Leyton.**—SCHOOLS.—For two new handicraft centres:—Alterations, Downsell-road School; improvements to latrines, Trumpington-road School. Specifications, conditions, and forms of tender from Mr. William Jacques, A.R.I.B.A., of 2, Fen-court, Fenchurch-street, E.C. Deposit of £1.

MARCH 28.—**Golcar Wellhouse.**—ALTERATIONS.—For alterations to Golcar Wellhouse Council School. Plans seen, and specifications with quantities from the Education Architect, County Hall, Wakefield. Tenders to Mr. Francis Alvey Darwin, Clerk of the County Council, County Hall, Wakefield.

MARCH 28. — **Lepton.** — ALTERATIONS. — For alterations and renovations to Lepton Council School. Plans seen, and specifications with quantities from the Education Architect, County Hall, Wakefield. Tenders to Mr. Francis Alvey Darwin, Clerk of the County Council, County Hall, Wakefield. Deposit of £1.

MARCH 29. — **Eckington.** — ADDITIONS.—The Trustees of Camm's School, Eckington, invite tenders for building additions and making alterations to the school buildings. Plans seen, and quantities from the architects, Messrs. Currey & Thompson, 3, Market-place, Derby.

MARCH 29.—**Ross.**—REPAIRS, ETC.—For certain alterations and repairs to the Council elementary schools. Plans and particulars at the County Surveyor's Offices, Shire Hall, Hereford.

MARCH 29. — **Stafford.** — BLOCK.—For the construction of a new ward block at the Isolation Hospital, Coton Field. Plans seen, and specification, quantities, and particulars from Mr. W. Plant, A.M.Inst.C.E., Borough Engineer and Surveyor, Borough Hall, Stafford, on £2 2s. deposit.

MARCH 31.—**Frome.**—TANK.—For the construction of an underground brick water-storage tank at Nunney Catch, near Frome. Specifications and plans with Mr. J. A. Beynon, Surveyor, Nunney-road, Frome.

* MARCH 31.—**Manchester.**—SCHOOL, ETC.—The Manchester Education Committee invite tenders for erection of a school and caretaker's house. See advertisement in this issue for further particulars.

APRIL 1. — **Colwyn Bay.** — WORKS.—For the promenade extension works at Rhos, Colwyn Bay, the erecting of sea-wall, the construction of slip-way, etc. Plans, sections, and drawings with Mr. William Jones, A.M.Inst.C.E., Engineer and Surveyor to the Council, Council Offices, Colwyn Bay. Quantities on deposit of £5

APRIL 1.—**Norwich.**—COTTAGES.—For the erection of a row of six cottages at the Whitlingham Sewage Farm. Forms of tender, specifications, conditions of contract, and drawings with Mr. Arthur E. Collins, M.Inst.C.E., City Engineer, Guildhall, Norwich.

BUILDING—*continued.*

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

✱ APRIL 2.—**Dartford.**—HOSPITAL EXTENSIONS.—The Metropolitan Asylums Board invite tenders for extension of the male staff bath-rooms at the Small-pox Hospital. See advertisement in this issue for further particulars.

APRIL 2.—**Sale.**—SCHOOL.—For erection of proposed higher elementary school at Sale. Plans and specifications by Messrs. E. J. Thompson & Son, architects, Sale. Apply to Messrs. Frank Hewitt & Son, quantity surveyors, 33, Brazennose-street, Manchester. Quantities on deposit of £1 1s.

✱ APRIL 5. — **Tring.** — POLICE-STATION.—The Hertfordshire C.C. invite tenders for the erection of a police-station. See advertisement in this issue for further particulars.

APRIL 7.—**Reading.**—WORKS.—For the execution of the undermentioned works at Cattle Market, in Great Knollys-street, Reading:—The erection of an implement shed; alterations and additions to house; concrete foundation for "Durax" paving; kerbing and channelling in connection with the reconstruction of existing cattle bays; and supply and erection of ironwork and fittings in connection with the reconstruction of existing cattle bays and new entrance gates to the market. Drawings, specifications, and general conditions seen, and forms of tender, at the offices of the Borough Engineer and Surveyor, Town Hall, Reading.

NO DATE. — **Abergynolwyn.** — STATION.—The Talyllyn Railway Company invite tenders for building a new station at Abergynolwyn. Plans, specification, and particulars from the architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Borth.

NO DATE.—**Aberystwyth.**—HOUSE.—For building a house near Penparke, Aberystwyth. Plans, specification, and particulars from the architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Borth.

NO DATE. — **Chesterfield.**—DRILL HALL, ETC.—For the erection of drill hall, miniature range, offices, and quarters. Mr. W. H. Wagstaff, A.M.Inst.C.E., architect and surveyor, Chesterfield.

NO DATE.—**Deiniolen.**—LIBRARY.—For the erection of a Carnegie Free Library at Deiniolen. Plans and specifications by Mr. Albert H. Fennell, Architect and Surveyor, Chester-le-Street, Co. Durham, seen at the office of the Council, "Y Gynghorfa."

NO DATE. — **Exmouth.** — PAVILION.—For new pavilion for the Exmouth Croquet and Lawn Tennis Club. Mr. E. E. Ellis, architect, Polsloe-road, Exeter, and Exmouth.

NO DATE. — **London.**—THEATRE.—For proposed picture theatre in East London. Mr. F. H. Lyon, architect, 33, Bulstrode-avenue, Hounslow, W.

NO DATE. — **Merioneth.**—ADDITIONS, ETC.—For extensive alterations and additions to Brithdir Council School, near Dolgelley Plans, specification, and particulars from the County Architects, Messrs. Deakin & Howard Jones, M.S.A., Plas Ynys, Borth.

NO DATE.—**Sandbach.**—CHURCH.—For erection of new Roman Catholic Church, Sandbach. Mr. John Stringer, architect, Sandbach.

NO DATE. — **Todmorden.**—CHURCH.—For erection of proposed Spiritual Church in Eagle-street, Todmorden. Drawings seen, and specification and quantities from Mr. J. E. Stott, Lic.R.I.B.A., Rise-lane, Todmorden.

NO DATE.—**Wombwell.**—TOWER, ETC.—For the erection of a new tower and north porch at St. Mary's Church. Particulars and forms of tender, with conditions of contract and plans and specifications, at the office of Messrs. C. & C. M. Hadfield, architects, 19 St. James'-street, Sheffield. Quantities on deposit of £1 1s.

ENGINEERING, IRON, AND STEEL.

MARCH 17. — **Dunoon.** — WALLS, ETC.—For rebuilding and extending portions of breast walls and parapets on Loch Eck side. Specification and forms of tender from Messrs. W. & W. Disselduff, Joint District Clerks, 160, Argyll-street, Dunoon.

MARCH 17. — **Leeds.**—CHAMBERS.—For the construction of an overground transformer chamber and four underground transformer chambers. Form of agreement, specification, conditions of contract, and form of tender from Mr. C. Nelson Hefford, Engineer (*pro tem.*), 1, Whitehall-road, Leeds.

MARCH 24.—**Greenock.**—DOCK.—For removing the eastern caisson of the James Watt Dock and placing the same in the Garvel Graving Dock, and, after repairs, undocking and replacing caisson in its chamber. Form of tender and specification at the Engineer's Office, Municipal Buildings.

APRIL 3.—**London.**—GENERATORS.—For the reconstruction and rewinding of seventeen synchronous motor generators of 300-kw. capacity and three induction motor generators of 500-kw. Specifications, quantities, form of tender, etc., on application to the Clerk of the Council, at the County Hall, Spring-gardens, S.W., on deposit of £2.

APRIL 5. — **Teddington.**—FURNACES.—For erection of two destructor furnaces, boiler settings, flues, etc., with two Lancashire boilers. General conditions, specifications, form of tender, and drawings at the office of Mr. M. Hainsworth, Surveyor, Public Offices, Teddington; also Mr. W. Fairley, consulting engineer, Parliament-mansions, Victoria-street, Westminster. Deposit of £5.

APRIL 7.—**Dover.**—VIADUCT.—For the construction of a ferro-concrete viaduct and spur in the Pier District, Dover. Forms of tender, specification, and quantities on deposit of £5 5s., and conditions and drawings at the office of the Borough Engineer, Mr. W. C. Hawke, A.M.Inst.C.E., Maison Dieu House, Biggin-street, Dover.

NO DATE.—**Kidwelly.**—RAILWAY.—For the construction of a railway for Messrs. Stephens & Co. at Kidwelly. Plans, sections, and specifications at the office of Mr. J. E. Burnell, M.Inst.M.E., civil and mining engineer, Llanelly.

FURNITURE, PAINTING, MATERIALS, etc.

MARCH 15.—**Boldon Colliery.**—PAINTING.—For the painting and decorating of the Miners' Hall, Boldon Colliery. Mr. R. W. Knox, Secretary, 24, Donkin's-row, Boldon Colliery.

MARCH 17.—**Harwich.**—PAINTING.—For painting and distempering the Central School, Dovercourt. Specification at the office of the Borough Surveyor.

MARCH 17.—**Stratford-on-Avon.**—PAINTING.—For painting, etc., at Wayfield House, Snitterfield. Specification seen, and forms of tender from Mr. R. Dixon, Borough Surveyor, Municipal Offices, Stratford-upon-Avon.

MARCH 18. — **Bournemouth.**—PAINTING.—For painting the Bournemouth Pier. Particulars, forms of tender, and specification from the Borough Engineer, Mr. F. W. Lacey, M.Inst.C.E., Municipal Offices, Bournemouth. Deposit of £1 1s.

MARCH 18. — **Shrewsbury.** — PAINTING.—For painting seats in the Quarry and on river side, etc. Specification seen, and form of tender, on deposit of £1, from Mr. W. Chapple Eddowes, Borough Surveyor, Borough Surveyor's Office, The Square.

MARCH 19.—**Saltburn.**—PAINTING.—For painting and decorating, etc., the Brine Baths, Saltburn-by-the-Sea. Conditions of contract seen, and specification and form of tender from Mr. J. Draper, A.M.Inst.C.E., Surveyor to the Council.

MARCH 20. — **Bath.**—PAINTING. — For the repainting of the Midland and destructor bridges. Specifications and form of tender and information at the City Surveyor's Office, Guildhall, Bath. Mr. Chas. R. Fortune, City Surveyor, City Surveyor's Office, Guildhall, Bath.

MARCH 22. — **Kingston.** — BOARDS.—For the supply of 150 fathoms of first quality yellow square-edge Swedish boards. Forms of tender from Mr. Chas. W. Dash, Clerk to the Guardians, Union Offices, Kingston-on-Thames.

MARCH 24.—**Ashton-under-Lyne.**—PAINTING.—For the painting of the whole of the outside wood and iron work of the Poor Law Offices, Stamford-street. Specification from Mr. G. H. Partington, Clerk, Poor Law Offices, Stamford-street, Ashton-under-Lyne.

✱ MARCH 26. — **Willesden.**—PAINTING AND REPAIRING. — The Willesden Guardians invite tenders for certain painting and repairing works, etc., at the Workhouse and Infirmary. See advertisement in this issue for further particulars.

✱ APRIL 2. — **Tottenham and Hampstead.**—PAINTING AND REPAIRS. — The Metropolitan Asylums Board invite tenders for painting and repairs at two of their infirmaries. See advertisement in this issue for further particulars.

✱ NO DATE. — **London.** — RETURFING.—Tenders are invited for returfing the Tufnell Park Football Ground. See advertisement in this issue for further particulars.

ROADS, SANITARY AND WATER WORKS.

✱ MARCH 12.—**Shirley.**—REPAIRING PATHWAY.—The Bermondsey Council invite tenders for making good school pathways and playgrounds. See advertisement in this issue for further particulars.

MARCH 14. — **Nottingham.** — SEWER.—For the construction of a sewer from the junction of North-gate and Radford-road to the junction of Marshall-street and Mansfield-street, Sherwood. Drawings seen, and specification, quantities, and form of tender from Mr. Arthur Brown, M.Inst.C.E., City Engineer, Guildhall, Nottingham, on deposit of £2 2s.

MARCH 15.—**Aylesbury.**—SEWER.—For the construction of about 425-yds. run of 12-in. glazed socket pipe sewer, from Quainton-road to the Waddesdon Sewage Works, with manholes and other works. Plans, sections, and specifications seen, and particulars from the Engineer, Mr. R. T. Stewart, M.I.M. and Cy.E., 21, Walton-street, Aylesbury.

MARCH 17. — **Royton.**—SEWAGE.—For the work comprised in the sewering of Gravelhole and district. Plans seen, and specification, quantities, and particulars from the Engineer, Mr. R. Kilner, A.M.Inst.C.E., 25, Queen-street, Oldham. Deposit of £1 1s. for quantities.

MARCH 17. — **Spennymoor.** — ROADS.—For the making of Back West-terrace and Beech-terrace, Spennymoor. Plans, specifications, etc., seen, and forms of tender from Mr C. R. Spencer, Surveyor to the Council, Silver-street, Spennymoor.

MARCH 17. — **Thurnscoe.**—MATERIALS.—For the supply of materials, viz., broken granite, granite, chippings, broken slag, slag screenings, flags, kerbs, channelling, asphalt, pipes, etc. Form of tender from Mr. J. Ledger Hawksworth, Clerk, Council Offices, Bolton-upon-Dearne.

✱ MARCH 19. — **Fulham.** — ROAD REPAIR.—The Fulham B.C. invite tenders for making-up the carriageway of Rannoch-road. See advertisement in this issue for further particulars.

✱ MARCH 19. — **Isleworth.** — SANITARY APPLIANCES, ETC. — The Brentford Guardians invite tenders for provision of new sinks and sanitary appliances at the Infirmary. See advertisement in this issue for further particulars.

MARCH 20. — **Oldham.** — SEWAGE. — For the sewering, paving, and completing of passage at rear of Nos. 2 to 40, Trinity-street; passage at rear of Nos. 329 to 339, Ripponden-road; passages off Jowett-street, lying between Ripponden-street and Kilburn-street; passage lying between Jowett-street and Pretoria-street; passage rear of Nos. 369 to 373, Ripponden-road, and at rear of Nos. 2 to 26, Cornhill-street; passage at rear of Nos 1 to 41, Brierley-street. Plans and specifications seen, and quantities and forms of tender, at the Borough Surveyor's Office.

✱ MARCH 26. — **Caterham.** — TANKS, BACTERIA BEDS, SEWER, ETC.—The Caterham U.D.C. invite tenders for construction of foreman's lodge, additional tanks, bacteria beds, and sewer at the Sewage Works. See advertisement in this issue for further particulars.

✱ APRIL 2. — **Dartford.** — SETT-PAVING. — The Metropolitan Asylums Board invite tenders for sett-paving to Green-lane, Dartford, Kent. See advertisement in this issue for further particulars.

✱ APRIL 2.—**Hither Green.**—TAR-PAVING.—The Metropolitan Asylums Board invite tenders for tar-paving at the Hospital for Children. See advertisement in this issue for further particulars.

Public Appointment.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF WORKS	St. George's Guardians	£3 10s. per week	Mar. 25
*BOROUGH ENGINEER AND SURVEYOR	Ipswich Town Council	£350 per annum	April 12

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BUILDING PLANT—On the Premises	John Barker & Co.	Mar. 17
*BUILDER, CONTRACTOR'S, ETC., STOCK—At 23, Moorfields	Fryett, White, & Co.	Mar. 18
*BUILDING MATERIALS—On the Premises	Veryard & Yates	Mar. 27
*OLD TIMBER AND MATERIALS—At the Depot, Crystal Palace	Fuller, Horsey, Sons, & Cassell	Mar. 27
*FREEHOLD HOUSES AND BUILDING LAND—At the Mart	Debenham, Tewson, Richardson, & Co.	April 1
*STONEMASON'S YARD, MACHINERY, HOUSE, ETC.—At the Mart	Chesterton & Sons	April 3
*FREEHOLD BUILDING SITE AND RESIDENTIAL PROPERTY—At the Mart	Debenham, Tewson, Richardson, & Co.	April 8

PATENTS—*continued from page 332.*

22,843 of 1912.—Willy Schmidt: Bolt fixings for ceilings, walls, and the like.

23,141 of 1912.—Henry Philip Forrest, John George Rawson, and John Philip Forrest: Systems of hot-water circulation, applicable also to hot-water supply.

24,430 of 1912.—Heinrich Porm: Timber piling devices.

25,771 of 1912.—Wilfred Creswick and Samuel Scales: Tiles for roofing.

25,978 of 1912.—Max Kirchner: Device for cleaning sewers, pipes, and the like.

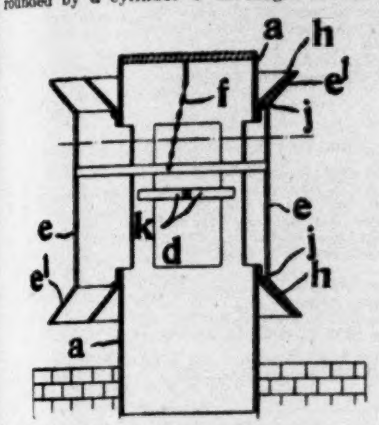
26,926 of 1912.—Moses Mishel: Platforms or the like particularly for use in cleaning windows.

27,736 of 1912.—Edgar Henry Bence: Automatic travelling distributors for filter beds or the like.

SELECTED PATENT.

20,104 of 1911.—Frank Iliff: Chimney-tops.

This relates to a chimney-top, and consists in the provision of a cylindrical shaft *a* with a closed top, having lateral openings *d*, surrounded by a cylinder *e* of larger diameter,



20,104 of 1911.

suspended by a chain *f*, so as to close the openings on the windward side. Pads or rubber bands *j* prevent noise. Conical flanges *e*, *h*, are provided on the cylinder and shaft respectively. Crossbars *k* prevent damage by the sweep's brush.

PUBLISHER'S NOTICES.

Tel. 613 Gerrard. Telegrams, "The Builder, London."

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, etc., etc.

Six lines or under ..... 0s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 0d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

Four lines (about thirty words) or under ..... 2s. 0d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps must not be sent; but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," 4, Catherine Street, W.C.

Advertisements for the current week's issue are received up to ONE p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after TWELVE NOON on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies* addressed to the *Office*, 4, Catherine Street, Aldwych, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN the COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed), 1s.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

February 18.—By P. CHASE GARDENER & Co.

Battersea.—54 and 55, John-st., u.t. 35 yrs., g.r. 4l., w.r. 38l. 10s. £165

By MANSELL & ROWE.

Upper Norwood.—Crystal Palace-parade, Uplands, u.t. 24 yrs., g.r. 21., p. 350

By HEPPER & SONS.

Leeds.—Gelderd-rd., Cattle Market Hotel, f. 5,000

February 19.—By EDWIN FOX, BOUSFIELD, BURNETTS, & BADDELEY.

City.—72, Cheapside (a.), f., y.r. 1,000l. £22,150
Hackney.—Fremont-st., f.g. rents 10l., reversion in 52½ yrs. 210
Brookfield-rd., f.g. rents 42l., reversion in 64 yrs. 870
Lower Clapton.—Mandeville-st., f.g.r. 5l. 10s., reversion in 64 yrs. 110
Powerscroft-rd., f.g.r. 25l., reversion in 65 yrs. 500
Southgate.—Springfield-rd., f.g. rents 15l., reversion in 68 yrs. 320
Dulwich.—Crystal Palace-rd., f.g.r. 22l. 10s., reversion in 63 yrs 450
Forest Gate.—Tower Hamlets-rd., f.g. rents 14l., reversion in 63 yrs. 310
Stratford.—Maryland-st., f.g.r. 8l., reversion in 41 yrs 185
Ashlin-rd., f.g. rents 35l. 4s., reversion in 74 yrs 730
Leyton.—Huxley-rd., f.g. rents 20l., reversion in 66 yrs. 400
Murchison-rd., f.g. rents 27l., reversion in 68 yrs. 575
Leytonstone.—Lonsdale-rd., f.g. rents 10l., reversion in 69 yrs. 230
Bow.—Lefevre-rd., f.g. rents 17l., reversion in 52 yrs. 355
Bruce-rd., f.g.r. 10l., reversion in 53 yrs. 225
24 to 32, 68 to 76 (even), Bruce-rd., f., w.r. 343l. 4s. 2,105
7 to 13 (odd), 29, 31, and 33, Edgar-rd., f., w.r. 230l. 2s. 1,505
10 to 18 (even), Edgar-rd., f., y. and w.r. 142l. 16s. 990
Norwood.—Parry-rd., nine plots, f. 130

By EDWIN EVANS & SONS

Kentish Town.—Spencer-rd., f.g.r. 6l., reversion in 53 yrs. 125
Clapham.—82, Lilleshall-rd., u.t. 57½ yrs., g.r. 6l., y.r. 46l. 295
Horton Kirby, Kent.—Blue-cottages, f., w.r. 19l. 4s. 190
Feltham.—Camden-av., f.g. rents 20l., reversion in 83 yrs. 360
Penge.—St. John's-rd., f.g. rents 12l., reversion in 84 yrs. 255

By GODWIN, BAILEY, & Co.

Chelsea.—2, 10, 11, and 17, Walton-pl., u.t. 9 yrs., g.r. 30l., y.r. 590l. 3,590
44, Hans-rd., u.t. 9 yrs., g.r. 1l., y.r. 65l. 365

By MAY & PHILPOT.

Brixton.—51, Beechdale-rd., u.t. 78 yrs., g.r. 7l., e.r. 42l. 400

By EDWARD C. LENDON & Co.

Dulwich.—Dunstans rd., f.g. rents 45l., and a peppercorn, reversion in 86¼ yrs. 900

By W. F. LANGLEY SMITH.

Putney.—10, Langside-av., u.t. 93 yrs., g.r. 9l. 9s., y.r. 50l. 450
96 and 96a, Chelverton-rd., u.t. 79 yrs., g.r. 13l. 10s. 650

By MOORE & SONS.

Tewkesbury, Glos.—Bradley's Farm, 43 a. 1 r. 7 p., f. 1,900
High-st., Trendishoe, f. 250
Malvern-view and 2 a. 0 r. 34 p., f., y.r. 20l. ... 220
Elm-villa and 9 a. 0 r. 34 p., f. 735

By WARNER, SHEPPARD, & WADE.

Stockerston, Leics.—Cottage and pasture, 33 a. 3 r. 13 p., f. 1,055

February 20.—MAY & ROWDEN.

Fulham.—249, New King's-rd., f., p. 1,025
Hampstead.—31, Pond-st., f., y.r. 75l. 825
St. John's Wood.—8, Cavendish-rd., u.t. 7 yrs., g.r. 15l., y.r. 80l. 225
Mottingham.—13, 15, and 16, Avondale-rd., u.t. 92 yrs., g.r. 22l. 1s., y.r. 84l. 450

By STIMSON & SONS.

Hornsey.—Falkland-rd., f.g. rents 45l. 15s., reversion in 82 yrs. 980
Effingham-rd., f.g. rents 63l., reversion in 87 yrs. 775
Kilburn.—Tennyson-rd., f.g. rents 33l., reversion in 74 yrs. 670
Camberwell.—Southampton-st., freehold rental 115l. 1,820
Hampton.—114, High-st., f., y.r. 32l. 400
Brixton.—17, 19, and 25, Vining-st., u.t. 53 yrs., g.r. 15l., w.r. 109l. 4s. 395
17 to 27 (odd), Craster-rd., u.t. 63 yrs., g.r. 39l., y.r. 197l. 1,225
28 and 30, Millbrook-rd., u.t. 10 yrs., g.r. 8l. 8s., y.r. 60l. 150
Stockwell.—9, Dalyell-rd., u.t. 51 yrs., g.r. 7l. 7s., w.r. 48l. 12s. 150
Newington Causeway.—No. 81 (a.), f., e.r. 60l. 320
Leyton.—280, High-rd. (a.), u.t. 75 yrs., g.r. 7l., y.r. 60l. 660
Peckham.—45, 47, and 49, Marmont-rd., u.t. 38 yrs., g.r. 15l., w.r. 124l. 16s. 310
Plumstead.—22 and 24, Princes-rd., f., w.r. 36l. 8s. 200

By J. G. DEAN & Co.

Wandsworth.—10, Wandle-rd., u.t. 55 yrs., g.r. 6l., p. 400

By DUNCAN, KIMPTON, & SONS.

Westcliffe-on-Sea.—30 and 32, Hamlet Court-rd. (a.), f., y.r. 175l. 4,020
21, Anerley-rd., f., e.r. 48l. 630
Dulwich.—2 and 3, Kims-rd., u.t. 34 yrs., g.r. 14l., y.r. 62l. 250

By CUTHBERT LAKE & Co.

Earlsfield.—386, Garratt-la. (a.), u.t. 68 yrs., g.r. 9l., y.r. 45l. 300
398 to 404 (even), Garratt-la., u.t. 68 yrs., g.r. 40l., w.r. 191l. 2s. 875
13, 14, 15, and 20, Summerley-st., f., w.r. 123l. 10s. 680
29 to 35, Summerley-st., f., w.r. 235l. 6s. 1,400
12 to 19, 19a, and 20a, Skelbrook-st., u.t. 68 yrs., g.r. 63l., w.r. 280l. 16s. 1,000
Summerley-st., f.g.r. 10l., reversion in 85 yrs. 200
Tottenham Court-rd.—11 and 12, Tottenham-mews, f.g.r. 60l., reversion in 48 yrs. 1,200

By ALFRED SPAIN & SON.

Gravesend.—20, Cambrian-gr., f., w.r. 20l. 16s. £180
15, Wrotham-rd., f., e.r. 30l. 400

February 21.—By LEOPOLD FARMER & SON.

Bethnal Green.—14, Wennington-rd., u.t. 44 yrs., g.r. 3l. 10s., w.r. 35l. 2s. 128

By FRITH & Co.

Stroud Green.—3, Nelson-rd., u.t. 72 yrs., g.r. 11l., y.r. 42l. 300
Wood Green.—53, Cobham-rd., u.t. 86 yrs., g.r. 6l., y.r. 30l. 225
Harringay.—77, Beresford-rd. u.t. 82 yrs. g.r. 6l., e.r. 34l. 250

By WEBB & NEILSON.

Enfield.—9, 11, 37, 39, 76, and 78, Churchbury-rd., u.t. 66 yrs., g.r. 24l., w.r. 118l. 6s. 380

February 22.—By C. R. MORRIS, SONS, & PEARD.

Kingston, Somerset.—Hill and Tan Yard Farms, 79 acres, f. 4,770

February 24.—By CHARLES SPARROW & SON.

North Finchley.—2 and 3, Greta-ter., f., w.r. 79l. 6s. 600

By WILKINSON, SON, & WELCH.

Hove.—New Church-rd., Hassendean, f., p. 3,000

February 25.—JOHN BOTT & SONS.

Herne Hill.—303, Norwood-rd., u.t. 65 yrs., g.r. 8l. 10s., y.r. 45l. 400

By HENRY H. COLLIER & MADGE.

Walworth.—125 and 127, Lorrimore-rd., u.t. 41 yrs., g.r. 10l., y.r. 60l. 405

By GEO. GOULDSMITH, SON, & Co.

Chelsea.—6, St. Leonard's-ter., u.t. 27 yrs., g.r. 5l., p. 800

By FREDERICK WARMAN.

Stroud Green.—66, Uplands-rd., f., e.r. 40l. ... 400
Highbury.—113, Highbury-quadrant, u.t. 37 yrs., g.r. 15l., p. 325
Stoke Newington.—95, Riversdale-rd., u.t. 57 yrs., g.r. 8l. 8s., y.r. 34l. 200
Holloway.—25, Hornsey-st., u.t. 45 yrs., g.r. 6l. 10s., e.r. 40l. 185

By WOODS & SNELLING.

New Eltham.—1 and 2, Footscray-rd., etc., f., y.r. 83l. 1,365

By F. HOWTON & DAVISON.

Ealing.—19 to 25 (odd), Connaught-rd., u.t. 71 yrs., g.r. 16l., w.r. 126l. 2s. 500
3, Cambridge-villas, f., y.r. 36l. 380

By GREEN & SON.

Hammersmith.—1, Cromwell-gr., u.t. 63 yrs., g.r. 6l., y.r. 45l. 370
5, Kilmarsh-rd., u.t. 52 yrs., g.r. 6l., y.r. 45l. 260
Shepherd's Bush.—17, Augustus-rd., u.t. 50 yrs., g.r. 6l., e.r. 38l. 165

By DREWEATT & WATSON.

Newbury, Berks.—Queen's-rd., Ivy House and 2 a., 3 r. 18 p., f. 880

By GEORGE LOVEITT & SONS.

Coventry.—19, Broadgate, and premises adjoining, f. 6,300

By J. BURMAN ROSEVEAR & SON.

Fulham.—25, Stokenchurch-st., u.t. 79 yrs., g.r. 5l., y.r. 36l. 400
East Sheen.—18, 20, 24, and 26, Howgate-rd., u.t. 80 yrs., g.r. 22l., y.r. 112l. 912

February 26.—By DOUGLAS YOUNG & Co.

Thornton Heath.—54 and 56, Norbury-rd., f., y.r. 83l. 16s. 320
Balham.—72, Alderbrook-rd., u.t. 64 yrs., g.r. 5l. 5s., w.r. 36l. 8s. 245

By RONSON & PERRIN.

Highgate.—29, Claremont-rd., u.t. 70 yrs., g.r. 7l. 7s., y.r. 36l. 270
Crouch End.—69, Cecile Park., u.t. 70 yrs., g.r. 8l. 8s., e.r. 45l. 260

By ROBERT TIDEY & SON.

De Beauvoir Town.—12, Balmes-rd., u.t. 68 yrs., g.r. 5l. 15s., w.r. 50l. 14s. 230

By DYER, SON, & HILTON.

Blackheath.—177, Westcombe-hill., u.t. 68 yrs., g.r. 7l., p. 200

February 27.—By DUNN, SOMAN, & COVERDALE.

Mile End.—Allas-rd., f.g. rents 39l. 15s., reversion in 52 yrs. 865
Allas-rd., f.g. rents 147l. 16s., reversion in 53 yrs. 3,185
27, 29, 33, 37, 51, 53, 55, 59, and 61, Portman-pl., f., w.r. 283l. 12s. 1,995
39 and 40, Allas-rd., f., y. and w.r. 58l. 16s. ... 565
156 and 158, Globe-rd. (a.), f., y.r. 65l. 520
229 to 277 (odd), and 243, Old Ford-rd., f., w.r. 157l. 2s. 1,530

By ABERCROMBIE & EDMUNDS.

Leyton.—2 to 12 (even), Stanley-rd., u.t. 81 yrs., g.r. 18l., w.r. 169l. 800

By N. & H. W. BOUSTRED.

Finchley.—11, Chandos-rd., u.t. 95 yrs., g.r. 7l. 7s., e.r. 34l. 270

By CANE & Co.

Dulwich.—9, Kelmore-gr., u.t. 63 yrs., g.r. 6l., y.r. 32l. 250
21, 24, and 25, Rodwell-rd., u.t. 65 yrs., g.r. 15l., w.r. 85l. 16s. 275

By T. D. & A. R. PEARCY.

Regent's Park.—78, 80, and 82, The Forge, 84, Little Albany-st., and 44, Clarence-gdns., u.t. 10 yrs., g.r. 50l., y. and w.r. 252l. 16s. ... 190

By PETER S. BIRKOLD.

Islington.—130, Barnsbury-rd., f., y.r. 42l. 420
4, Milner-st., f., e.r. 50l. 480
100 and 102, Newington Green-rd., f., e.r. 72l. 550
Canonbury.—15, Alma-rd., u.t. 33 yrs., g.r. 15l., w.r. 74l. 2s. 11

By ALEXR. ROBERTSON.

South Kensington.—12, Neville-ter., u.t. 41 yrs., g.r. 9l., p. £870

By HENRY HENDRIKS & CO.

Handsworth, Staffs.—142 and 144, Murdock-rd., f., w.r. 40l. 8s. 560

February 28.—By HULBERT & HAYMAN.

South Lambeth.—1 and 3, Dorset-rd., u.t. 74 yrs., g.r. 17l. 5s., w.r. 146l. 18s. 620

Brixton.—84, Angell-rd., u.t. 45 yrs., g.r. 10l. 10s., p. 350

Peckham.—45, Pentridge-st., u.t. 36 yrs., g.r. 2l. 16s., w.r. 33l. 16s 110

By WALTER HALL & SONS.

Brixton.—41, Sudbourne-rd., u.t. 56 yrs., g.r. 8l., y.r. 35l. 275

Willesden.—3, Wesley-ter., u.t. 96 yrs., g.r. 8l., y.r. 40l. 375

By ROBERTSON, MORGAN, & BARTON.

Fulham.—14, Armadale-rd., u.t. 59¾ yrs., g.r. 3l., w.r. 44l. 4s. 195

Tottenham.—449, 453, and 455, Seven Sisters-rd. (s.), u.t. 63½ yrs., g.r. 25l. 10s., w.r. 119l. 2s. 155

By WREFORD, DIXON, & WINDER.

Bermondsey.—127 to 133 (odd), Galley Wall-rd., f., w.r. 144l. 6s. 1,250

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River.

	£ s. d.
Best Stocks	1 16 0
Picked Stocks for Facings	2 10 0

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
Flettons	1 14 0	Best Blue Pressed Staffordshire	3 15 0
Best Fareham Red	3 12 0	Do. Bullnose	4 0 0
Best Red Pressed Ruabon Facing	5 0 0	Best Stourbridge Fire Bricks	4 0 0

BRICKS, &c. (*Continued*).

Per 1000, Delivered at Railway Depôt.

	£ s. d.		£ s. d.
GLAZED BRICKS— Best White, Ivory, and Salt Glaz'd Str'tch'rs	12 7 6	Double Headers	14 17 6
		One Side and two Ends	18 17 6
Headers	11 17 6	Two Sides and one End	19 17 6
Quoins, Bullnose, and 4½ in. Flats	15 17 6	Splays & Squints	17 7 6
D'ble Stretchers	17 17 6		

Second Quality £1 10s. per 1000 less than best.

	s. d.	
Thames and Pit Sand	6 9	per yard, delivered.
Thames Ballast	5 6	" "
Best Portland Cement	36 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 13s. 6d. per yard delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly dpt.

STONE.

Per Ft. Cube.

	s. d.
BATH STONE—delivered on road waggons, Paddington Depôt	1 7½
Do. do. delivered on road waggons, Nine Elms Depôt	1 9½
PORTLAND STONE (20 ft. average)— Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 4½
White Basebed, delivered on road waggons Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 6½

Per Ft. Cube, delivered at Railway Depôt.

	s. d.		s. d.
Ancaster in blocks	1 10	Closeburn Red Freestone	2 0
Beer in blocks	1 6	Red Mansfield Freestone	2 4
Greenshill in blocks	1 10	Talacre & Gwespyr Stone	2 4
Darley Dale in blocks	2 4		
Red Corsehill in blocks	2 3		

YORK STONE—*Robin Hood Quality.*

	s. d.
Per Ft. Cube, Delivered at Railway Depôt. Scappled random blocks	2 10
Per Ft. Super., Delivered at Railway Depôt. 6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto, ditto	2 6
3 in. sawn two sides slabs (random sizes)	0 11½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7
1½ in. to 2 in. ditto, ditto	0 6
HARD YORK— Per Ft. Cube, Delivered at Railway Depôt. Scappled random blocks	3 0
Per Ft. Super., Delivered at Railway Depôt. 6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 8
6 in. rubbed two sides ditto	3 0
3 in. sawn two sides slabs (random sizes)	1 2
2 in. self-faced random flags	0 5

SLATES.

Per 1000 of 1200 at Railway Depôt.

In. In.	£ s. d.	In. In.	£ s. d.
20×10 best blue Bangor	13 2 6	20×10 best Eur'ka unfading green	13 17 6
20×12 ditto	13 17 6	20×12 ditto	18 7 6
20×10 1st quality ditto	13 0 0	18×10 ditto	13 5 0
20×12 ditto	13 15 0	16×8 ditto	10 5 0
16×8 ditto	7 5 0	20×10 permanent green	11 12 6
22×10 best blue Portmadoc	13 12 6	18×10 ditto	9 12 6
16×8 ditto	6 12 6	16×8 ditto	6 13 6

TILES.

At Railway Depôt.

	s. d.		s. d.
Best plain red roofing (per 1000)	42 0	Best "Hartshill" brand, plain sand-faced (per 1000)	45 0
Hip and Valley (per doz.)	3 7	Do. pressed (per 1000)	42 6
Best Broseley (per 1000)	50 0	Do. Ornamental (per 1000)	47 6
Do. Ornamental (per 1000)	52 6	Hip (per doz.)	4 0
Hip and Valley (per doz.)	4 0	Valley (per doz.)	3 6
Best Ruabon red, brown, or brindled (Edw'ds) (per 1000)	57 6	Staffords. (Hanley) Reds or Brindled (per 1000)	42 6
Do. Ornamental (per 1000)	60 0	Hand-made sand-faced (per 1000)	45 0
Hip (per doz.)	4 0	Hip (per doz.)	4 0
Valley (per doz.)	3 0	Valley (per doz.)	3 6

WOOD.

BUILDING WOOD. At per standard.	£ s. d.		£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	15 0 0	...	16 10 0
Deals: best 3 in. by 9 in.	15 0 0	...	16 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	12 10 0	...	13 10 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.	
Deals: seconds	1 0 0	less than best.	
Battens: seconds	0 10 0	" "	
2 in. by 4 in. and 2 in. by 6 in.	11 10 0	...	12 10 0
2 in. by 4½ in. and 2 in. by 5 in.	10 10 0	...	11 10 0
Foreign Sawn Boards— 1 in. and 1½ in. by 7 in.	0 10 0	more than battens.	
½ in.	1 0 0	"	
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 5 0 0	...	6 5 0
Seconds	4 10 0	...	5 0 0
Small timber (8 in. to 10 in.)	3 17 6	...	4 0 0
Small timber (6 in. to 8 in.)	3 5 0	...	3 10 0
Swedish balks	2 12 6	...	3 0 0
Pitch-pine timber (30 ft. average)	6 0 0	...	7 0 0

Specify and use only brands which have passed the test of time.

Leading Cement Brands

THE . . . OF

British Portland Cement Manufacturers, Limited,

4, LLOYDS AVENUE,
LONDON, E.C.

Telegrams:
"Britporcem, Fen, London."

Telephone:
6404 Avenue (Private Exchange).

WOOD (Continued).

JOINERS' WOOD.	At per standard. £ s. d.		£ s. d.		
White Sea: first yellow deals, 3 in. by 11 in.	26	0 0	...	27	0 0
3 in. by 9 in.	24	0 0	...	25	0 0
3 in. by 9 in.	18	10 0	...	19	10 0
Battens, 2½ in. and 3 in. by 7 in.	21	10 0	...	22	10 0
Second yellow deals, 3in. by 11in.	20	0 0	...	21	0 0
" 3 in. by 9 in.	15	0 0	...	16	0 0
Battens, 2½ in. and 3 in. by 7 in.					
Third yellow deals, 3 in. by 11 in. and 9 in.	16	0 0	...	17	0 0
Battens, 2½ in. and 3 in. by 7 in.	14	0 0	...	15	0 0
Petersburg: first yellow deals, 3 in. by 11 in.	23	0 0	...	24	0 0
Do. 3 in. by 9 in.	20	0 0	...	21	0 0
Battens	15	0 0	...	16	0 0
Second yellow deals, 3 in. by 11 in.	17	10 0	...	18	10 0
Do. 3 in. by 9 in.	16	0 0	...	17	0 0
Battens	12	10 0	...	13	10 0
Third yellow deals, 3 in. by 11 in.	14	0 0	...	15	0 0
Do. 3 in. by 9 in.	13	10 0	...	14	10 0
Battens	11	10 0	...	12	10 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	16	10 0	...	17	10 0
" " 3 in. by 9 in.	14	10 0	...	15	10 0
Battens	13	0 0	...	13	10 0
Second white deals, 3in. by 11in.	14	10 0	...	15	10 0
" 3 in. by 9 in.	13	0 0	...	14	0 0
Battens	12	0 0	...	12	10 0
Pitch-pine: deals	25	0 0	...	26	10 0
Under 3 in. thick extra	0	10 0	...	1	0 0
Columbian or Oregon Pine, best quality	23	10 0	...	25	0 0
Yellow Pine—First, regular sizes	30	0 0	upwards.		
Oddments	35	0 0	"		
Seconds, regular sizes	36	0 0	"		
Oddments	31	0 0	"		
Kauri Pine—Planks per ft. cube	0	5 6	...	0	6 6
Dantzig and Stettin Oak Logs— Large, per ft. cube	0	3 0	...	0	3 9
Small " "	0	2 6	...	0	3 0
Wainscot Oak Logs, per ft. cube	0	7 6	...	0	9 0
Dry Wainscot Oak, per ft. super. as inch	0	0 10	...	0	1 2
¼ in. do. do.	0	0 9	...	0	1 0
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0 10	...	0	1 3
Selected, Figury, per ft. super. as inch	0	1 6	...	0	2 6
Cuba Mahogany	0	1 4	...	0	2 6
				upwards.	
Dry Walnut, American, per ft. super. as inch	0	0 10	...	0	1 2
French, "Italian," Walnut	0	0 10	...	0	1 4
Teak, per load (Rangoon or Moulmein)	20	10 0	...	26	0 0
Do., do. (Java)	19	0 0	...	22	10 0
American Whitewood planks, per ft. cube	0	5 6	...	0	6 6
Prepared Flooring, etc.—	Per square.				
1 in. by 7 in. yellow, planed and shot	0	14 6	...	0	18 0
in. by 7 in. yellow, planed and matched	0	14 9	...	0	18 0
1¼ in. by 7 in. yellow, planed and matched	0	17 6	...	1	3 0
1 in. by 7 in. white, planed and shot	0	14 0	...	0	16 0
1 in. by 7 in. white, planed and matched	0	14 3	...	0	16 6
1¼ in. by 7 in. white, planed and matched	0	16 6	...	0	18 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0	12 6	...	0	15 0
1 in. by 7 in. " "	0	15 0	...	0	18 6
¾ in. by 7 in. white " "	0	12 0	...	0	14 0
1 in. by 7 in. " "	0	14 6	...	0	16 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.		£ s. d.		
Rolled Steel Joists, ordinary sections	9	0 0	...	10	0 0
Compound Girders, ordinary sections	11	0 0	...	12	0 0
Steel Compound Stanchions	12	0 0	...	13	0 0
Angles, Tees, and Channels, ordinary sections	11	0 0	...	12	0 0
Fitch Plates	11	0 0	...	12	0 0
Cast Iron Columns & Stanchions, including ordinary patterns	8	10 0	...	9	0 0

METALS.

	Per ton, in London. £ s. d.		£ s. d.		
Iron— Common Bars	9	0 0	...	9	10 0
Staffordshire Crown Bars, good merchant quality	9	5 0	...	9	15 0
Staffordshire "Marked Bars"	11	0 0	...	—	
Mild Steel Bars	9	5 0	...	9	15 0
Hoop Iron, basis price	10	0 0	...	—	
" " Galvanised	17	10 0	...	—	
("And upwards, according to size and gauge.)					
Sheet Iron Black— Ordinary sizes to 20 g.	10	5 0	...	—	
" " 24 g.	11	5 0	...	—	
" " 26 g.	12	15 0	...	—	
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	10 0	...	—	
Ordinary sizes to 22 g. and 24 g.	16	0 0	...	—	
" " 26 g.	17	0 0	...	—	
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	18	10 0	...	—	
" " 22 g. and 24 g.	19	0 0	...	—	
" " 26 g.	20	10 0	...	—	
Galvanised Corrugated Sheets— Ordinary sizes, 6ft. to 8ft. 20 g.	15	0 0	...	—	
" " 22 g. and 24 g.	15	5 0	...	—	
" " 26 g.	16	15 0	...	—	
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	12	10 0	...	—	
Best Soft Steel Sheets, 2 g. & 24 g.	13	10 0	...	—	
" " 26 g.	15	10 0	...	—	
Cut Nails, 3 in. to 6 in.	11	0 0	...	11	10 0
(Under 3 in., usual trade extras.)					

LEAD, &c.

Delivered in London.

	£ s. d.		£ s. d.		
Lead—Sheet, English, 4lb. and up	19	10 0	...	—	
Pipe in coils	20	0 0	...	—	
Soil pipe	23	0 0	...	—	
Compo pipe	23	0 0	...	—	
Zinc—Sheet—	In casks of 10 cwt.				
Vielle Montagne	33	15 0	...	—	
Silesian	33	10 0	...	—	
Zinc, in bundles, 1s. per cwt. extra.					
Copper— Strong Sheet per lb.	0	1 1	...	—	
Thin "	0	1 2	...	—	
Copper nails "	0	1 0	...	—	
Copper wire "	0	1 0	...	—	
Brass— Strong Sheet "	0	1 0	...	—	
Thin "	0	1 1	...	—	
Tin—English Ingots "	0	2 2	...	—	
Solder—Plumbers' "	0	0 10½	...	—	
Tinmen's "	0	1 2	...	—	
Blowpipe "	0	1 4	...	—	

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

15 oz. thirds	2½d.	26 oz. fourths	4d.
" fourths	2d.	32 oz. thirds	5½d.
21 oz. thirds	3½d.	" fourths	4½d.
" fourths	3½d.	Fluted Sheet, 15 oz.	3d.
21 oz. thirds	4½d.	" 21 oz.	4d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.*

Per Ft., Delivered.

¼ Rolled plate	2½d.	Figured Rolled, Oxford Rolled, Oceanic, Arctic, Muffled, and Rolled Cathedral, white	3½d.
⅜ Rough rolled and rough cast plate	2½d.	Ditto, tinted	5d.
½ Rough rolled and rough cast plate	3d.		

* Not less than two crates.

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 2 3
" " in barrels	"	0 2 4
" " in drums	"	0 2 6
Boiled " in barrels	"	0 2 6
" " in drums	"	0 2 9
Turpentine in barrels	"	0 2 8
" in drums	"	0 2 10
Genuine Ground English White Lead, per ton (In not less than 5 cwt. lots)		28 5 0
Red Lead, Dry	"	26 10 0
Best Linseed Oil Putty	per cwt.	0 10 0
Stockholm Tar	per barrel	1 12)

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 6
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

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All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

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Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

TENDERS.

GOOD FRIDAY WEEK.—In consequence of the Easter Holidays, we go to press a day earlier than usual next week, the *Builder* being published on Thursday. All communications must reach the Editor by *first post on Wednesday morning.*

* Denotes *accepted.* † Denotes *provisionally accepted.*

BETHESDA.—For alterations to Amana Congregational Chapel, for the Trustees of Amana Congregational Chapel, Douglas-hill, Bethesda. Messrs. Rich, Davies, Son, & Tilling, architects, Bangor:—

Watkin, Jones, & Son	£548 19	W. Roberts & Son	£496 0
Jones & Williams	497 10	R. & H. Hughes	449 0
J. Roberts & Sons	497 0	J. D. Pritchard, Bethesda*	405 0

BRIDLINGTON.—For erection of house and shop in High-street. Mr. C. F. Johnson, architect and surveyor, Bridlington:—

W. Usher	£443 0 0	H. R. Milner	£405 0 0
F. W. Martindale	426 10 0	Sampson & Siddall	381 11 6
H. Holmes	417 3 0	E. Wilson*	377 0 0
J. Smallwood	412 1 0		

[All of Bridlington.]

COLEFORD.—For proposed new Council School, West Dean Five Acres, near Coleford, for the Gloucestershire Education Committee. Mr. R. S. Phillips, Architect, Shire Hall, Gloucester:—

Orchard & Peer	£4,112	E. J. Flewelling	£3,850
S. Lovell	4,100	E. Wilding	3,833
W. J. Nelmes	4,080	W. J. B. Halls	3,494
A. S. Cooke & Son	4,041	E. Walters & Son, Bristol*	3,467
W. F. Drew	3,900		
W. Jones	3,900		

DAGENHAM.—For construction of sewerage works at Chequers-lane. Mr. W. J. Grant, Surveyor to the Council:—

Kirk & Randall, Ltd.	£1,598 0 0
W. Muirhead & Co., Ltd., London*	1,166 5 0
W. J. Lingwood	1,098 16 6

¶ Estimates, Specifications, Quantities, Requisitions, Invoices, Stock Sheets, ordinary Correspondence, and Circular Letters

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GERRARD'S CROSS.—For house in Austen-way, Gerrard's Cross, for Mr. H. Neville. Mr. A. T. S. Weatherhead, architect, Ealing, W.:—

J. Bailey	£651	F. Green	£585
Rust & Ratcliffe	649	Allwork Bros.	565
Lovell & Sons	606		

Amended Tenders.

F. Green*	£545	Allwork Bros.	£525

GRANARD.—For erection of eleven cottages at the Fair Green. Mr. J. C. Thompson, Town Surveyor:—

Eleven Houses on Fair Green.

J. Hearne £1,589

Thirteen Houses on The Hill.

J. Hearne, Longford* £1,867

HULL.—For alterations and additions to No. 1, Victoria Parade. Mr. J. H. Hirst, City Architect, Guildhall, Hull. Quantities by City Architect:—

P. T. Kettlewell	£289 0 0
G. Jackson & Son	349 14 9
A. J. Darneley & Son, Spring-street*	341 11 0

[All of Hull.]

HULL.—For alterations and additions to the farm buildings at the Hull City Asylum. Mr. J. H. Hirst, City Architect, Guildhall, Hull. Quantities by City Architect:—

J. H. Fenwick	£2,825	G. Jackson & Sons*	£2,089

[Both of Hull.]

HULL.—For alterations and additions to Estcourt-street School. Mr. J. H. Hirst, City Architect, Guildhall, Hull. Quantities by City Architect:—

A. J. Darneley & Son	£1,067	G. Panton & Sons, Ltd	£1,187
T. Goates & Son	1,157	F. Singleton*	1,043
G. Jackson & Sons	1,142		
P. T. Kettlewell	1,217		

[All of Hull.]

ISTRAD MYNACH.—For the erection of fourteen semi-detached houses at Istrad Mynach, for the Dilwyn Building Club. Mr. H. Gabe Jones, architect and surveyor, Bank-chambers. Hengoed:—

J. Lloydd	£4,830 0	E. James, Istrad Mynach	£4,196 10
W. H. Lee	4,508 0	T. Pagh*	4,004 0
Morgan & Davies	4,410 0		
D. Jones	4,228 0		

[Mr. Pagh withdrew, and the contract was then given to Mr. E. James.]

KETTERING.—For the erection of new Ladies' Department, for the Kettering Co-operative Clothing Manufacturing Society, Ltd. Mr. B. J. Williams, architect, Parkstile-chambers, Kettering:—

Kettering Industrial Co-operative Society, Ltd., Works Department* £7,910

KILVENNY and ANSTRUTHER EASTER.—For erection of centre for manual instruction, cookery, and laundry-work, for Kilvenny Parish and Anstruther Easter Parish. Mr. G. C. Campbell, architect and surveyor:—

Mason:	A. Kinnear, Largo	£255	10	0
Joiner:	J. Williamson, Cellardyke	287	9	6
Plumber:	W. Nicol, Buckhaven	213	0	0
Plasterers:	T. Williamson & Son, Pittenweem	131	16	6
Slater:	W. Gilmour, West Anstruther	56	2	10
Joiner:	J. Williamson, Cellardyke	‡43	16	0
Painters:	D. Walker & Son, Anstruther	19	8	4

‡ For fittings.

LANGFORD (Somerset).—For new billiard-room, etc., Langford House, for Mr. T. S. Hill. Mr. W. S. Skinner, F.R.I.B.A., 27, Orchard-street, Bristol:—

A. Millar & Son	£1,810 15 9½
R. Ridd & Son	1,698 0 0
W. Cowlin & Son	1,698 0 0
L. Thomas & Son	1,698 0 0
H. Pittard & Son	1,615 0 0
A. Dowling & Son, Bristol*	1,589 0 0

Supplementary Tender for Teak Panelling.

H. Pittard & Son	£179	A. Dowling & Son	£106

LONDON.—For alterations at the Marylebone-road offices, for the Metropolitan Water Board:—

Hampton & Sons, Ltd.	£79	A. J. Staines & Co., Ltd.	£66
Johnson & Co.	70	W. C. James	60
W. H. Gaze & Sons, Ltd.	69	W. King & Sons	57

LONDON.—For fitting-up premises at No. 166, West End-lane, for the Metropolitan Water Board:—

Hampton & Sons, Ltd.	£102 7	W. King & Sons	£91 0
Johnson & Co.	100 0	W. H. Gaze & Son	89 0
W. C. James	91 15	A. J. Staines & Co., Ltd.	85 0

LONDON.—For erection of a gymnasium at the Northcote-road Fire-Station, for the London County Council:—

J. & C. Bowyer, Ltd.	£1,442 0 0	J. Marsland & Sons	£1,345 0 0
F. & T. Thorne	1,439 0 0	H. L. Holloway	1,300 0 0
Lole & Co.	1,373 7 6	A. Roberts & Co., Ltd.	1,296 0 0
L. & W. Whitehead, Ltd.	1,368 0 0	G. Godson & Sons	1,268 0 0
W. Johnson & Co., Ltd.	1,360 0 0	Triggs & Co.	1,259 0 0

LUDHAM.—For erection of the Primitive Methodist Church. Messrs. A. F. Scott & Son, architects, Norwich:—

J. Evans	£632	E. Clarke	£521
R. Shanks	595	E. J. Smith	515
R. W. Riches	587	Sparkes & Latten, Norwich*	486
Carter & Wright	578		
J. Youngs & Son	563		

MIDSOMER NORTON.—For erection of a head teacher's house, for the Education Committee of the County of Somerset. Mr. W. F. Bird, M.S.A., architect, Midsomer Norton. Quantities by the architect:—

Coles Bros., Peasedower S. John, near Bath* £710

[Six tenders received.]

SPALDWICK.—For proposed alterations and additions to Council School, for the Hunts Education Committee. Mr. Herbert Leete, County Surveyor, Architect and Surveyor to the Education Committee, Huntingdon:—

J. Saint & Son	£343 10 0	M. Allen & Sons	£268 0 0
H. White	341 3 11	G. Page & Son, Buckden*	262 0 0
F. Giddings	323 14 7		
J. Parren & Son	294 1 11		

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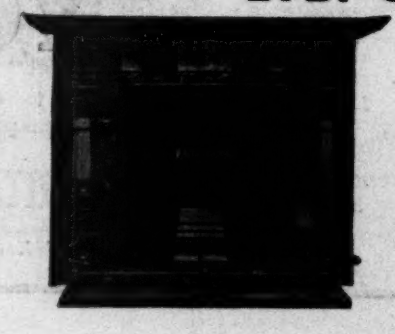
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